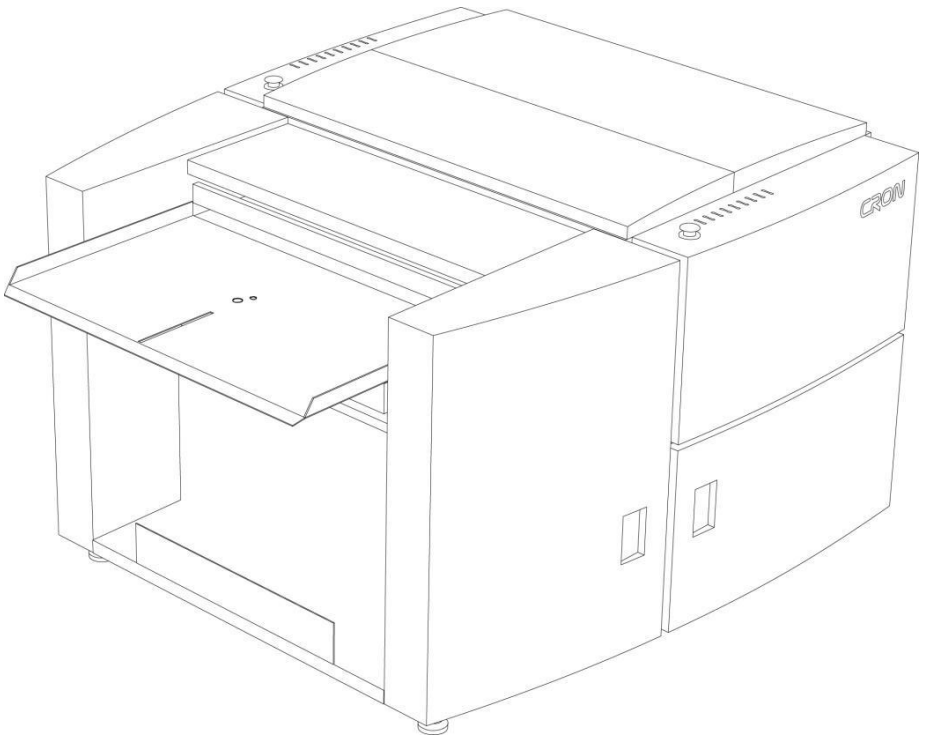
CRON
科雷机电

TP26/36/46 UVP26/36/46

Computer to Plate (CTP)

User's Manual

Version 2010



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Foreword

Hangzhou CRON Machinery & Electronics Co., Ltd. has been devoted itself to the research and development and manufacturing of prepress products. Through 14 years of innovation and reform, CRON "Caililong" laser typesetter has become a generally known brand in pre-press industry. From 2000, CRON began to set foot in CTP technology. After experiencing the development course of silver CTP, photo sensitive CTP, heat sensitive CTP, and UV CTP, it has become the leading enterprise of CTP technology in China.

At the end of 2008, CRON took the lead domestically in rolling out traditional PS plate CTP "UVCTP" with fully independent intellectual property right, which caused a great sensation in the industry and drew the great attention of international distributors. The amount of sales has been grown rapidly.

The confidence of user in CRO products comes from the operating philosophy of CRON as diligently striving after and courage in innovation for 18 years; from the powerful research and development strength and abundant development experience of CRON; from the learning spirit of CRON actively in introducing advanced international technology; and from the undisputable fact that CRON products operate stably and earn profits for its customers for 18 years. Today, CRON R&D team has achieved many technical patents and national rewards in CTP design and manufacturing, mechanics, optics, and electronics and has formed its own unique design thought. CRON production system and quality inspection system are working according to ISO9000 standard and can provide stable and high-quality CTP products to customers!

Up to date, CRON has established powerful distribution network and service network that covers the global. CRON products are exported to Asia, South America, Europe, and other regions and won tremendous international praise. Huge after-sales service team provide VIP tracking service by adhering to localized service philosophy and wholeheartedly provide all-directional service to the users all over the world!
"Creating World-class CTP Product" has been the objective of CRON persisted for long time. CRON will continue to maintain the leading position in prepress technology in China, and forge prepress equipment manufacturing base, and provide high-cost-effective CTP products for vast printing enterprises.

LaBoo CTP Features

High Precision
Output precision exceeds 3000dpi
Repositioning precision of output image is up to 0.01

High Speed
Fastest output speed among similar machines; output speed is not influenced by service life

Full Automatic
Automatic plate loading system + online plate developing, easy operation

Perfect Design
Brand new refining mechanical structure, patented vacuum plate absorption technology, stable and reliable operation, and easy and convenient maintenance

Convenient and Accurate 1bit TIFFData Interface
Connect any print art

Technical Support

CRON thank you for your support!
Thank you for purchasing LaBoo CTP serial products! You will enjoy the rapid and professional technical service

provided by CRON and our distributors and our technical service departments everywhere.

Local Support and Help
CRON will constantly provide the latest information on the products, service, and technology of the company to the distributors and technical service departments everywhere. When you need any help, please contact your distributor or technical service department first.

CRON Support and Help
If local distributor or technical service department cannot solve your problem, you can contact CRON technical support department directly, which will provide comprehensive and thorough service to you.

Electronic Information Service
You can obtain related information from CRON website, including operating skills, common fault solutions, software downloading, company information, production information, industrial information, expert service, etc.

Repair Service
Authorized CRON distributor and technical service departments at any where can provide repair service to you.

Hangzhou CRON Machinery & Electronics Co., Ltd.
Note: All pictures in this manual are for reference only, and the actual item is the standard. They are subject to change without notice.

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1. Safety Regulations

This manual serves LaBoo serial equipment operators and maintainers. Operators and maintainers must carefully read and understand the contents of the manual before use of LaBoo serial platemakers.
Necessary quality for operators and maintainers:
A. Previous working experience in prepress industry;
B. Know Microsoft operating system well.

1.1 Safety

1.1.1 Safety Mark

Warning!

Please carefully read and understand the contents of this manual before use of CRON LaBoo serial CTPs. Operator must operate strictly according to all safety manuals and specified procedures. Failure to operate according to the safety regulations may damage the equipment and even result in body injury.

Hazard!

Opening platemaker enclosure or changing platemaker and conducting illegal operation of platemaker hardware or electric circuit part without authorization may lead to severe damage to body or seriously damage platemaker.

Keep off!
It is strictly prohibited to look steadily at laser or at reflected laser; otherwise, it may hurt your eyes.
In serious case, it may result in the blindness.

Danger! Electricity!

Do not contact the electrified part of equipment with body (see the warning label on equipment). If contact the equipment, user must wear antistatic gloves to prevent from static electricity. It is strictly prohibited to touch electric elements such as power plug with naked hand; it is strictly prohibited to operate switch with wet hand.

Forbidden!

Prohibition! Non-professionals should not dismount this device.

Caution!

Be careful not jam your finger when open machine cover.

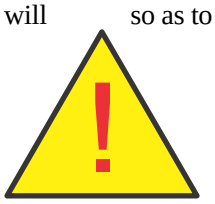
Dustproof

In order to guarantee the working quality and service life of the machine, be careful to prevent dust from accessing the inside of machine.

Emergency Switch

Emergency switch is a safety measure and functions in the following conditions: In case of emergency, it will immediately stop the rotation of drum after pressing down emergency switch. This switch is located on the casing on both the left and right sides of platemaker. When turn on the machine in normal condition, please make sure the emergency switch is in open state.

Note: A. Rotate according to the direction of the arrow on switch to start emergency switch.
B. When the equipment is in abnormal condition, please immediately press down emergency switch and find out the cause; the emergency stop switch should not be opened before handling the abnormal condition;
C. Emergency switch should be used when equipment is in abnormal condition. Do not press down this switch at will so as to avoid unnecessary trouble.



Attention!

The function of emergency switch is to stop the rotation of drum immediately other than cut off power.

Attention!

Make sure the power of machine is turned off before maintenance.

1.1.2 Safety Information

Laser safety
Keep off direct laser so as to avoid hurting eyes.

Power Utilization Safety

Equipment must be effectively grounded.
The maintenance of platemaker must be conducted after turn off power.
Do not touch machine with hand or finger when platemaker is working.
Do not make plate when large capacity electric appliance (such as electric welding) is working on the same line.
It is strictly prohibited to turn off power without authorization during platemaking.

Mechanical Safety
The enclosure of platemaker should not be dismounted unless in necessary condition.

Attention: Gloves must be worn and the tools and parts and components must be kept in good order during mechanical operation.
Do not conduct any maintenance and change to platemaker system without CRON authorization;
Do not place any article on platemaking equipment;
In non-emergency condition, it is strictly prohibited to press down emergency stop switch;
During mechanical part and component operation, gloves must be worn so as to prevent parts and components from rusting; tools and parts and components should be kept in good order.

Safety in Other Aspects
Prevent water or other fluids from flowing into the inside of platemaker;
Only use the plate material certified by CRON;
Other safety issues affecting the working quality and service life of machine;
Other safety issues affecting body safety and equipment safety;
Ensure the installation site and environment conditions of customer to meet the operating requirements on equipment.

1.2 Installation

The installation and bugging, and initialized operation of LaBoo serial CTP must be completed by CRON engineer or the engineer of the distributor authorized by CRON. Before installation, make sure both the site and environment have already met the requirements on the site of equipment operation (See Installation Guide).

1.3 Maintenance

All repair and maintenance operations must be conducted strictly according to the contents in Chapter V of this manual, Repair and Maintenance. Failure to dismount the machine according to the contents of the manual or illegal operation may lead to damage to equipment and even result in body injury.

2. Overview of CTP System

2.1 LaBoo CTP Series

Main LaBoo product series: Heat sensitive serial TP-46, TP-36, TP-26 series; UVP-46, UVP-36, UVP-26 series. CTP is the core equipment of the entire CTP platemaking system that can expose and make plate for heat sensitive and UV plate materials. The finished products can be used for traditional offset lithography.
For the models, specifications, and dimensions, see Installation Guide.

2.2 System Composition

CTP output system is mainly composed of plate feeder, direct platemaking system, crossover, plate processor, unloader, server, client computer and working flow software, digital proofing system, etc.

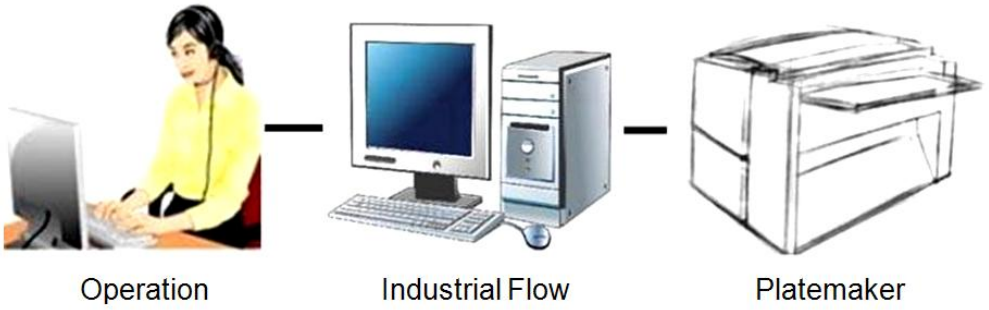


Figure 2-2-1 System Composition

For the working flow, see Figure 2-2-2.

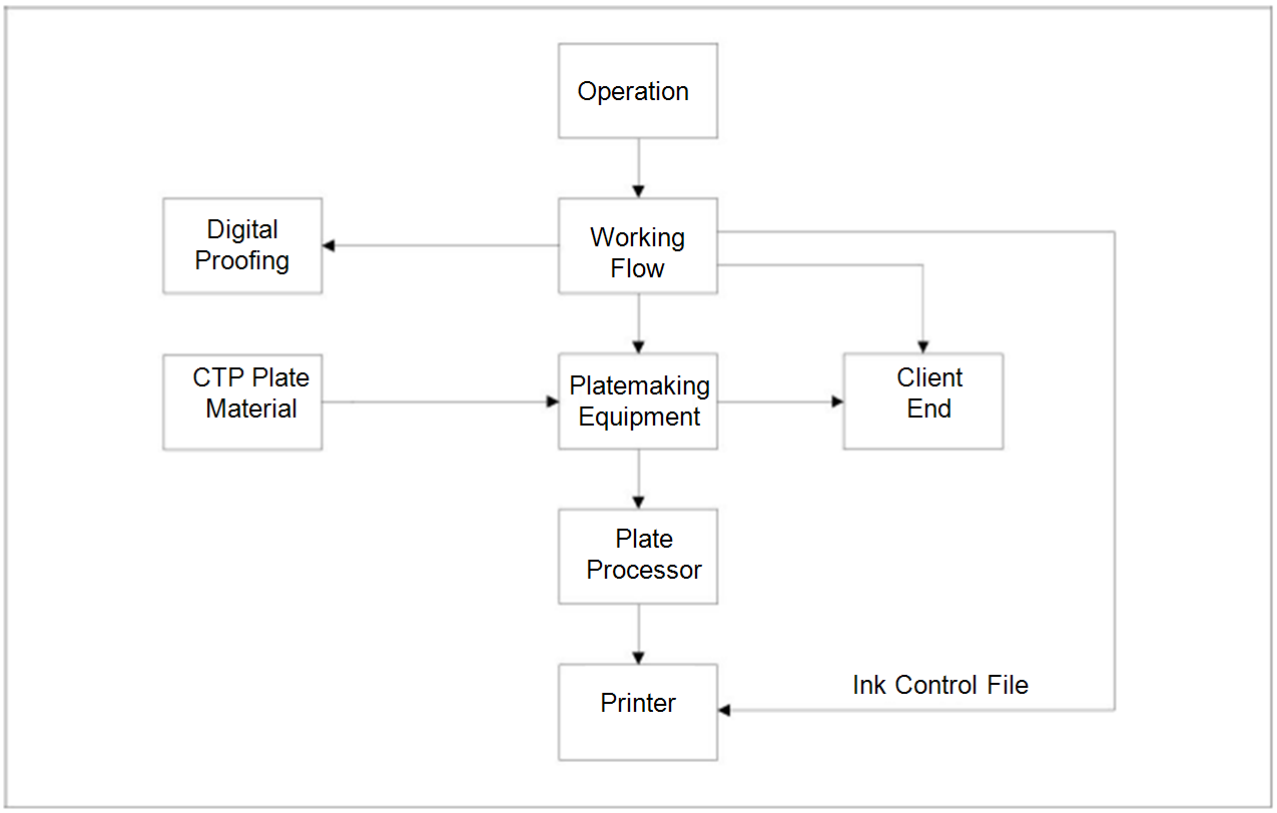


Figure 2-2-2 Working Flow

2.3 CTP

CTP system is composed of:
The graphic example (taking CTP 46 as an example) describes the main components of direct platemaking system;

Figure 2-3-1 System Composition

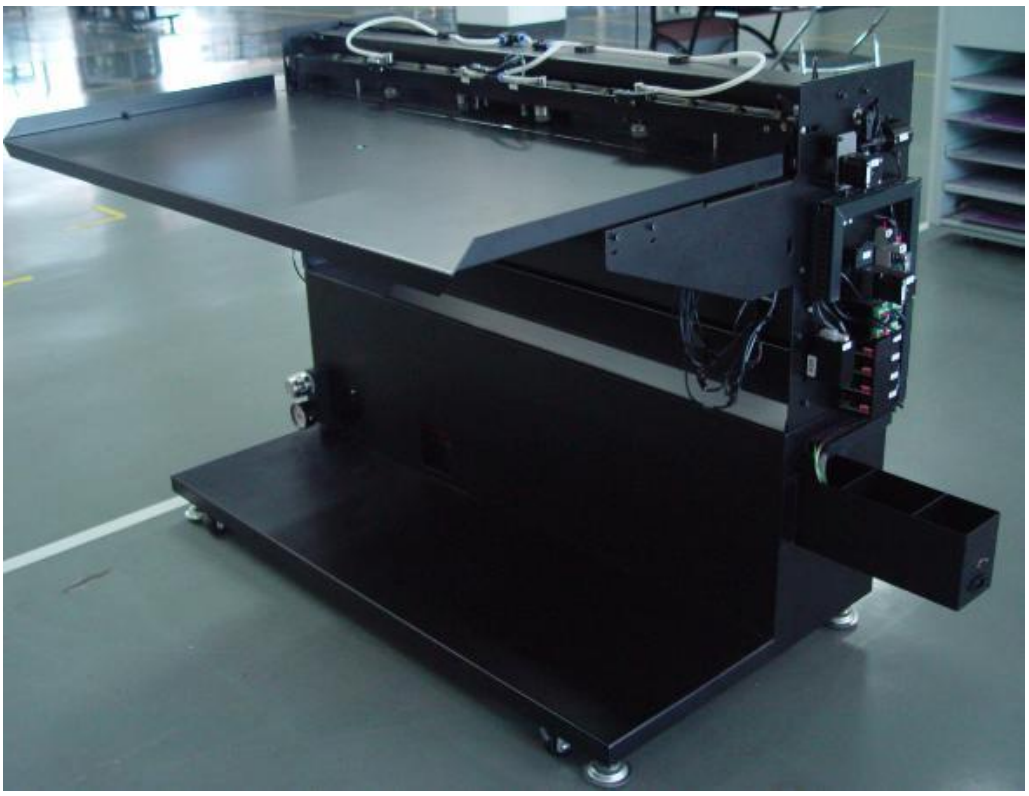


Figure 2-3-2 TPF-46A50 Plate Feeder

2.3.1 Composition of Plate Feeder

- Rack of plate feeder
- Plate box, centering mechanism
- Drive part
- Moving part of suction nozzle, width adjustment mechanism of suction nozzle
- Support
- Plate feeding/paper roller part
- Mobile guide board part
- Vacuum pump and air circuit system
- Electric appliance, control part

2.3.2 Composition of Platemaker

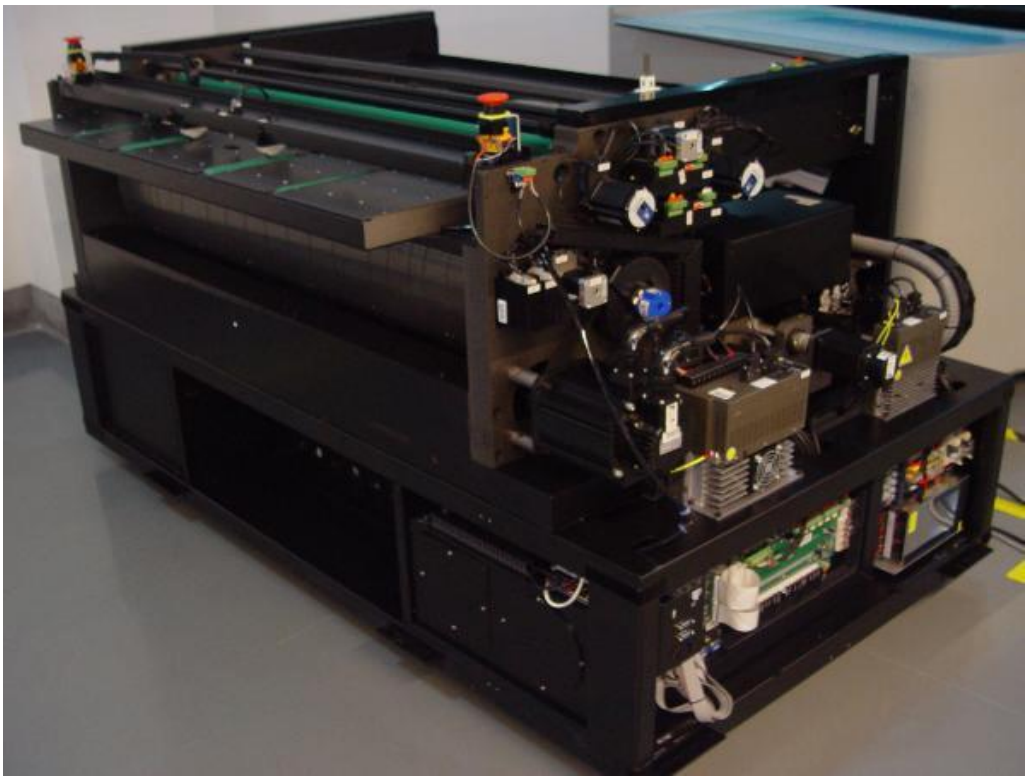


Figure 2-3-3: TP46 Platemaker

Platemaker is mainly composed of three parts: optical part, mechanical part, and electric part.

Optical part: Mainly include laser, fiber-optic coupling, solid set head, optical lens, optical energy sensor, laser drive plate, constant temperature control panel, switch power supply, etc., in which, laser, fiber-optical coupling, laser drive plate, constant temperature control panel, switch power supply, etc. are installed in laser constant temperature box;

Mechanical part: Mainly composed of rack, bottom plate, wall plate, drum, balance drive part, conveying plate part, roll pull guide, plate head on/off part, loading roller, unloading part, typeset part, screw bar guide rail part, scanning platform part, purified air part, etc.;

Electric part: Mainly composed of coder, master and secondary servo motors, actuator stepping motor, vacuum pump, master control panel, interface panel, relay, electromagnet, and position sensor, etc.

2.4 Operational Principle Block Diagram of Complete Machine

The working principle of platemaker is described by taking LaBoo heat sensitive platemaker as an example:
LaBoo heat sensitive platemaker is mainly composed of laser head, circuit system, and precision mechanical system. Thermal ablation is conducted on plate material by using N independent 830nm/1W semiconductor lasers as the optic source, conducting N optical source to solid set head through fiber-optic coupling, and closely absorbing the laser radiated by the fiber optic on solid set head through the focusing of optical lens. During working, the drum loaded with plate material shall rotate at high speed while the scanning platform installed with fiber-optic solid set system ad optical lens system will move laterally and synchronously; drive circuit system will drive the switching of each independent laser according to the dot matrix image of computer, thus forming latent image of dot matrix on plate material.

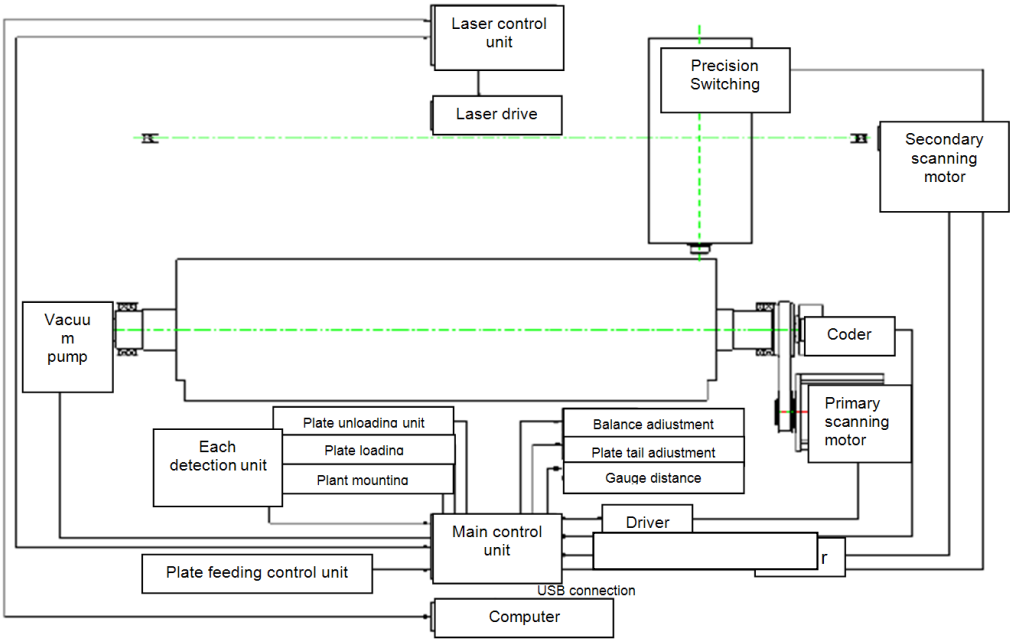


Figure 2-4-1 Operational Principle of Platemaker

2.4.1 Realization of the synchronization of **master scanning** and secondary scanning and granting signal.

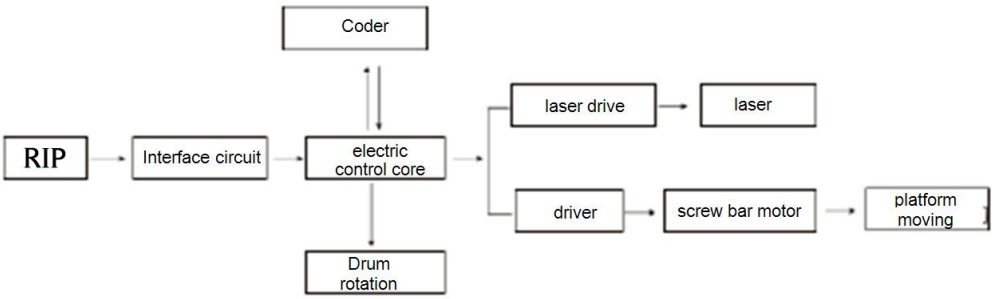


Figure 2-4-2: Block Diagram of Synchronization of Master and Secondary Scanning

2.4.2 Working Process

The working process of platemaker is introduced by taking full-automatic LaBoo TP-46 series as an example:

Create template: parameter setting (format of plate material, precision, exposure power): For creation of template and parameter setting (format of plate materials, precision, exposure power), please refer to LaBoo4.XX Instruction.

Plate feeding: If in automatic plate feeding mode, first of all, determine whether pre-plate feeding has bee conducted; if no pre-plate feeding, move the suction nozzle downward to determine whether it is paper or plate; if it is paper, then remove the paper and return to execute the last action; if it is plate, then feed plate to the inlet of the mainframe; in case of manual mode or plate already fed, just skip over the prevision action;

Plate loading: First position the drum; after the drum is positioned at the position of plate loading, open the plate head clip, then the plate feeding system will feed the plate to the position of plate head clip for positioning; the side guide system will position the side of plate material, then close the plate head clip and press down loading roller; the drum will rotate and load plate; open plate tail clip when the drum rotates to the position of plate tail,

then the drum rotates reversely and feed plate head below plate tail clip; close plate tail clip and the plate loading roller will lift up;

Imaging: Start up the drum; at this moment, if it is in automatic plate loading mode, the plate feeder will be started up to feed plate again; when the drum rotates and reaches the set value and reaches the vacuum pressure, it will begin to expose; the laser system on optic platform shall irradiate the laser beam carrying the dot matrix information of the computer to plate material to realize the transmission of text and image information. The optic platform will conduct uniform movement in a straight line and the drum will rotate for a cycle. The platform movement corresponds to the distance of optical path line. The plate exposure completes once the transmission of dot matrix information is completed; after that, the drum will decelerate and stop;

Plate unloading: After the drum stops, it will be positioned at the position of plate unloading. Plate unloading mechanism will open the plate head; the plate loading roller will be pressed down while the plate will bounce up and the plate unloading mechanism will reset. The drum will rotate clockwise and feed the plate into typeset mechanism; after the typeset mechanism sensor detects the access of plate, typeset mechanism will rotate and bring the plate material into crossover and the plate will be fed to plate processor through crossover; when the drum rotates to the place of plate tail, plate unloading mechanism will activate and open plate tail clip to enable the plate to feed smoothly; at this moment, plate loading roller will reset and the drum will rotate counterclockwise and adjust plate tail position for next time of plate loading; the plate tail mechanism will reset.

Plate processing: Developing, batch, cementing, drying, and other operations shall be conducted according to the developing temperature and time of plate material.

The following is the entire working flowchart of the platemaker:

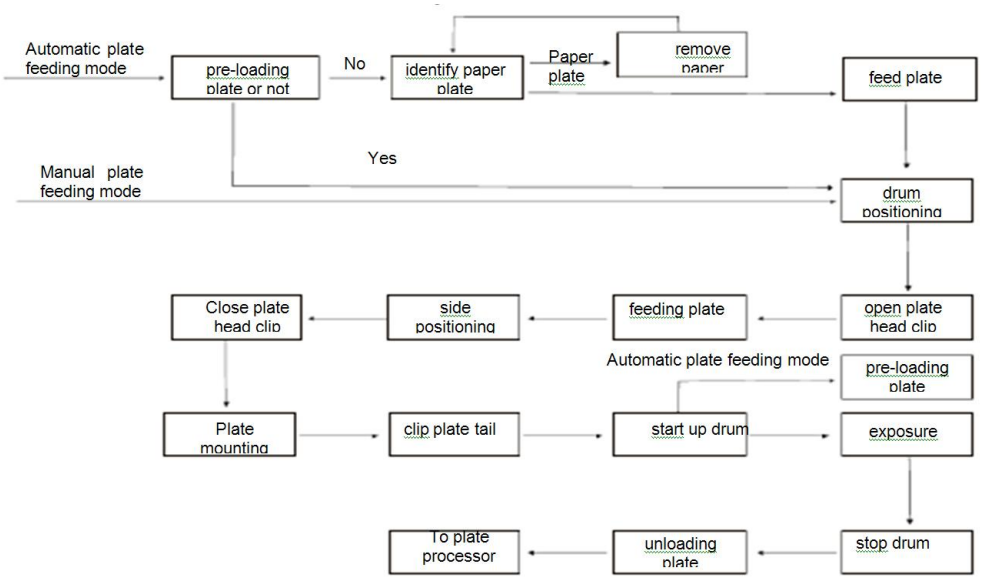


Figure 2-4-3 Working Flowchart

3. Installation and Fixation

3.1 Equipment Connection

Refer to the dimensions of equipment as described in the Installation Guide, work out the plan on equipment placement, and well prepare the water inflow, drainage, and exhaust pipe; after the arrival of equipment and unpacking, the equipment to be installed should be pre-placed properly. A certain space shall be reserved between equipment so as to check the correctness of the installation plan originally formulated. Among system equipment, mainframe is the heaviest and difficult to be handled. Plate processor should be connected with the water supply and drain pipes preliminarily. Once the plate processor is filled in with liquid, it cannot be moved any more. Therefore, before charging any liquid into plate processor, the plate inlet of the mainframe and the inlet of plate processor should be centered to make plate material move stably and smoothly. The basic flowchart for installation, please refer to the Installation Guide.

3.1.1 Fixing Mainframe:

Fix the platemaker after the platemaker is moved to the installation position. Rotate 3 fixed feet at the bottom of the machine and descend and fix the fixed feed on ground (see Figure 3-1-1) by taking the castor away from ground as reference; keep the castor free from force; adjust the level of machine with level meter; the front two feet will be used for adjusting the left/right level of equipment while the anchors in the rear shall be used for adjusting the front and rear level of equipment; when left/right level is adjusted, first remove the front cover of the top enclosure and dismantle plate loading roller, place level meter on the drum; then adjust the left and right feet, adjust the front and rear levels; the rear feet may be adjusted by placing level meter on the left or right top enclosure.

3.1.2 Fixing Plate Feeder:

Move plate feeder and enable it to connect platemaker closely; rotate the 4 fixed feet to enable the publishing plate of plate feeder to always maintain on the same horizontal line with the plate feeding plate of platemaker and keep left and right centering; during alignment, the top cover of plate feeder should be taken off first for inspection and ensure the correlative sensor installed on plate feeder during plate feeding process pass through the guide plate of the platemaker (see Figure 3-1-3).

Figure 3-1-1 Anchor Fixation

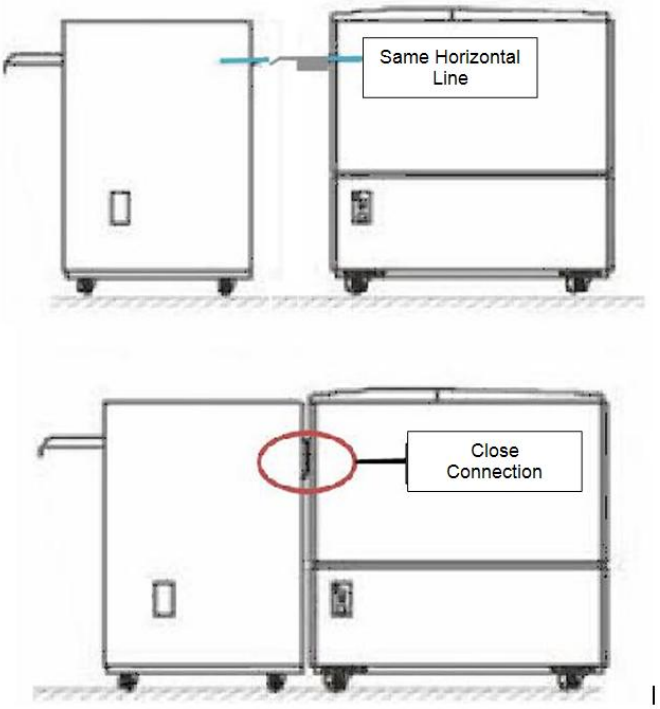


Figure 3-1-2 Installation Position of Platemaker and Plate Feeder

Alignment between Computer to Plate (CTP) guide plate orifice and feeding in position sensor

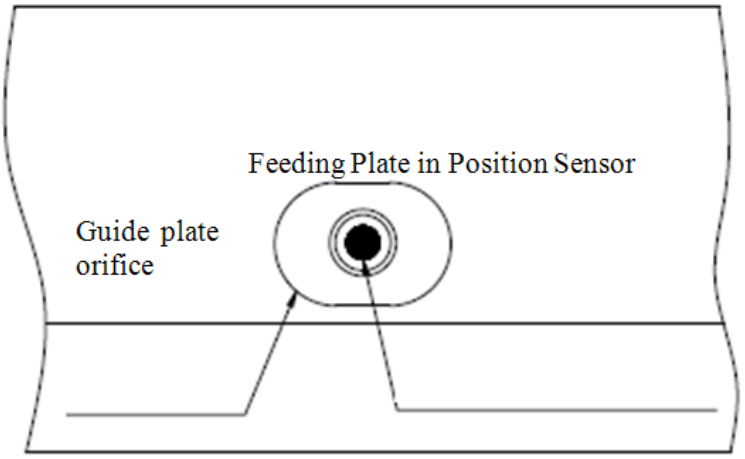


Figure 3-1-3

3.2 Install Plate Feeding Platform

This part is special for the mainframe using plate feeding platform.

3.2.1 Butt Connection between Plate Feeding Platform and Platemaker

Uplift the plate feeding platform by two persons and align the inlet of platemaker; the height of the platform surface should be on the same level as the plate guide plate of platemaker so as to make the feeding of plate material smoothly. The side with fixed screw hole should be downward as shown in Figure 3-2-1.

Figure 3-2-1

Figure 3-2-2

3.2.2 Fix Plate Feeding Platform

The attached M5 screw shall be used for fixing the plate feeding platform on platemaker as shown in Figure 3-2-2:

3.3 Plate Processor Fixation

The distance between plate processor and mainframe should ensure the crossover to push out from the left or right side; fix plate processor, rotate the 4 feet at the bottom of plate processor to enable the plate loading guide plate of plate processor on the same height of the publishing guide plate of platemaker; for the horizontal adjustment of plate processor, after adding developing solution, observe the liquid level and the parallelism of roller to adjust. Install water inlet and drain pipes.

3.4 Crossover Adjustment

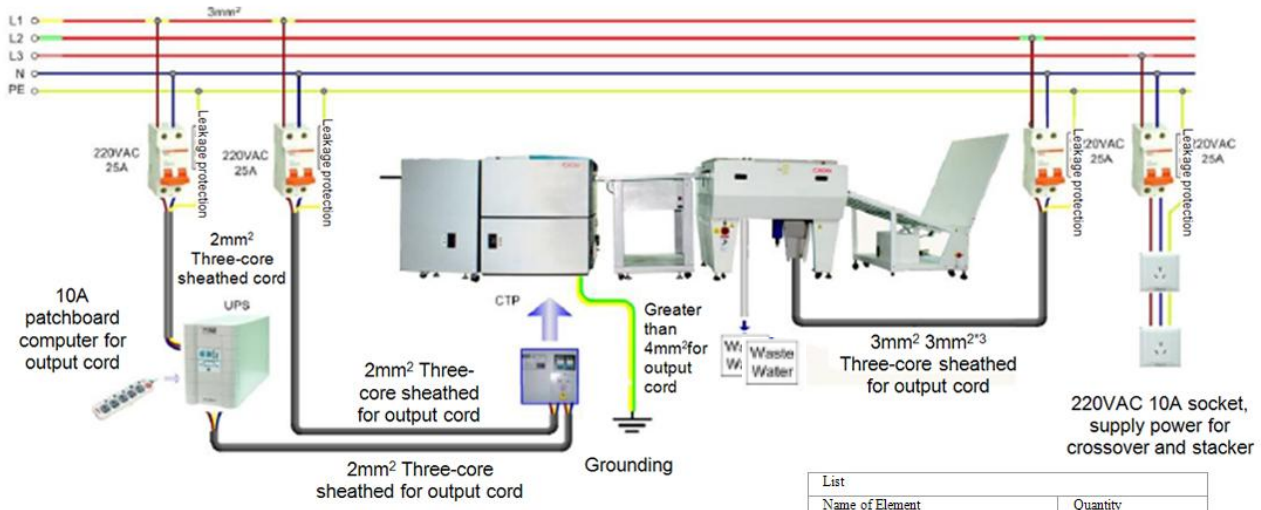
The connection end between crossover and platemaker should be adjusted to the same height as the outlet guide plate of platemaker; for the connection end with plate processor, it should be adjusted to the same height as that of plat feeding guide plate;

3.5 Stacker Positioning

The position of the connection between stacker and outlet of plate processor should be lower than the outlet guide plate of plate processor. Rotate the feet to fix the stacker.

3.6 Wire Connection

The requirements on power wiring are shown in Figure 3-6-1.



Note: Equipment grounding should meet the requirements of Installation Guide. The resistance to ground should be smaller than 0.5Ω. Resistance to ground must be measured with earth resistance meter. All power connections should adopt twisting mode. User should use the lead wire diameter as indicated in the diagram for laying down power line. All lead wires

List

Name of Element	Quantity
25A air switch + leakage protection	4
10A socket	2
10A patchboard	1
Red 3mm² power line	Approximately 10m
Light blue 3mm² power line	Approximately 10m
Yellow green 3mm² power line	Approximately 10m
2mm² core bushing	Approximately 5m
3mm² core bushing	Approximately 3m

Figure 3-6-1: Requirement on System Power Wiring

3.6.1 Main Control Line and Mainframe Power Line

Main control power line is connected with UPS online constant voltage regulator;
Mainframe power may be supplied by AV220V/50Hz directly (or per as the power supply of different countries) as shown in Figure 3-6-2 and Figure 3-6-3.

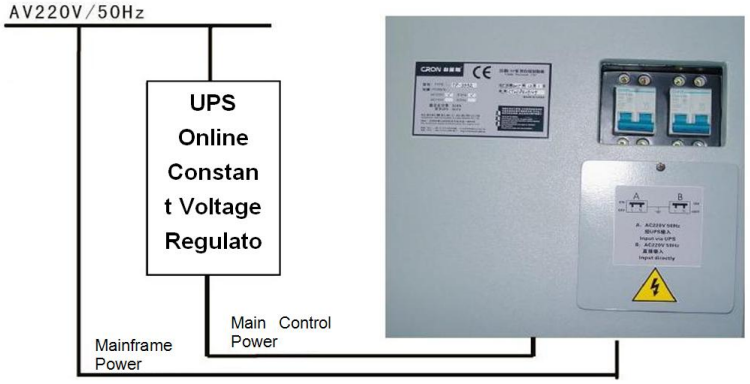


Figure 3-6-2

Figure 3-6-3

3.6.2 Communication between Mainframe and Plate Feeder and Connection with Power Supply

Connect platemaker to computer USB2.0 interface with the attached USB data cable; connect the power interface and serial port of plate feeder with appropriate interface on platemaker with attached power cord and serial data cable; connect laser communication interface with computer with attached cable as shown in Figure 3-6-4.

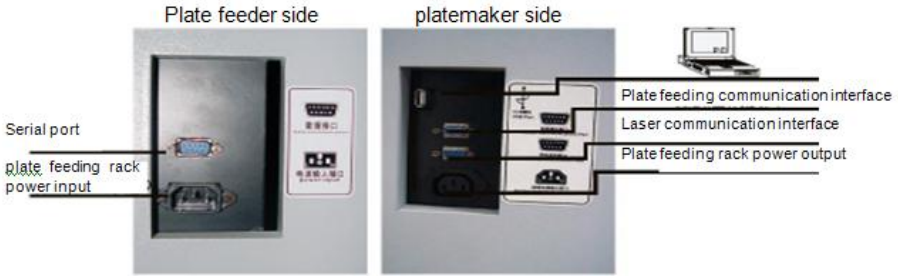


Figure 3-6-4

3.6.3 Ground Connection

Equipment grounding should use the cable that is greater than 4mm^2. The resistance to ground should be ≤0.5Ω. Check the threaded hole below the ground symbol in Figure 3-6-3; at the same time, client computer should be grounded as well. Ensure the mainframe and client computer to be grounded on the same place.

3.7 Connect Dust Exhaust Pump and Exhaust Pipe

Insert the power socket of dust exhaust pump into the dust collector socket the right lower side after platemaker; connect the dust exhaust pump interface with the supplied slim tube; connect one end of the think tube supplied to windpipe interface, fasten with anchor ear; the other end may be connected to drain pipe on plate processor, to ensure the thick pipe to ventilate freely. See Figure 3-7-1.
Note: Heat sensitive CTP should be connected to dust exhaust pump while UVP should not be co nnected to dust exhaust pump.

Figure 3-7-1

3.8 Connect Complete Equipment

Before the equipment is powered on, multimeter should be used for checking the power socket of equipment to see if there is any short circuit or broken circuit, whether the grounding connection meets requirements.
Connect device according to the operating instruction for each device:
Connect power source according to the requirements on the power of platemaker;
Connect power source according to the requirements on the power of plate processor;
Connect power source according to the requirements on the power of stacker;
Connect power source according to the requirements on the power of crossover.

4. Operation

Operation process:
Connecting Line → Power on → Install LaBoo Software → Install Dongle → install USB driver → Read in device parameter → Add template → Equipment Initialization → Place Plate Material Paper → Platemaker running test→ Platemaking Output

4.1 Connecting Line

Insert appropriate power socket according to the requirements on the power of device (refer to section 3.6).

4.2 Power-on and Turn-on

Turn on UPS power and connect the power of platemaker mainframe and computer
Turn on the two switches (as shown in Figure 3-6-3) at the lower left behind the mainframe.
The switch of TP-26 is at the lower right of the device. See Figure 4-2-1.

Figure 4-2-1

Power on and turn on crossover, plate processor, and stacker (for more detailed operation, please refer to the related instructions).

4.3 Install LaBoo Software

Refer to LaBoo Operating Instruction.

4.4 Install Dongle

Insert the dongle into the USB interface of client computer and install dongle, refer to LaBoo Instruction.

4.5 Install USB Driver Software

Insert the both ends of USB2.0 serial data cable into mainframe and computer respectively and fix them; at this moment, the computer will automatically detect the hardware and pop up the hardware installation guide as shown in Figure 4-5-1;

Click and select "Install from list or designated position (advanced) (S)" → "Next";
Click "Browse" → find the directory of installing LaBoo program, enter → click "UsbDrv Subdirectory" → "Next"; after completing installation, click "Finish". You can find out that, in the list of "Universal Serial Bus Controller" in "Hardware Device Manager" of the computer has already installed "Cron USB2.1 Subdirectory, V2A".

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Cron USB2.0 Device,V2A
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Figure 4-5-1

Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\LaBoo4.0\usbdrv
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Figure 4-5-2

4.4 Read in Equipment Parameter

Consult LaBoo Instruction

4.5 Add Template

Create appropriate template according to the job demand of client; consult LaBoo Instruction.

4.6 Equipment Initialization

First step, platform reset operation must be executed to disengage the lock hook from platform. Lock hook is used for protecting the scanning platform during transportation.
Click “Operation” → “Command Function Operation” → click “Platform Movement”→ “Send Command”; at this moment, the platform will move leftward and return after reaching the left limit sensor, and move to the right limit sensor.
Click “Operation” → “Equipment Initialization”; after select correct template, , → “Run”, the device will conduct reset self-test on each activator and adjust according to the plate material template parameter selected.
Note: In case of automatic plate feeding, “Auto Plate Loading” must be checked in template setting.

The test may continue after the initialization is successful.

4.7 Place Plate Material

4.7.1 Place Plate Material into Plate Box

When plate material is placed, the length in the direction of width should be generally greater than the length in the direction of height (i.e., during plate loading, the longer side should be in the front); the plate material should be placed in the center in the direction of width and the placed forward in the direction of height (i.e. the direction close to platemaker) as shown in Figure 4-7-1.
Note: Gloves must be worn when plate material is placed so as to avoid unnecessary damage to the photosurface of plate material.

Adjustment on placement of the plate material in different specifications:
After set parameter template, initialize the equipment, the limit pillar on the plate box shall automatically be adjusted to the position just for placing plate material; refer to the scale on plate box, place plate material in the middle as shown in Figure 4-7-1.

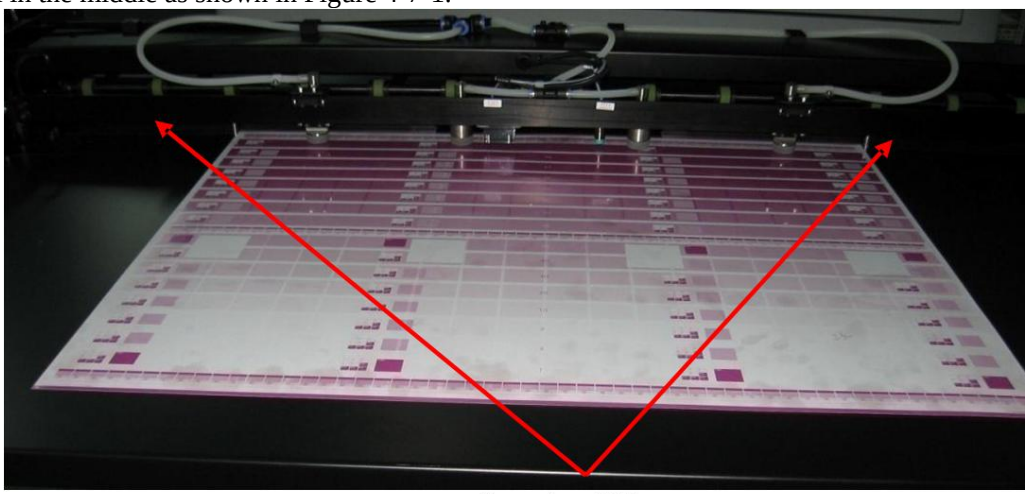


Figure 4-7-1

Note:
1. The emulsion side of plate material shall be put upward;
2. Please avoid direct contacting plate material with naked hand;
3. It is unnecessary to remove the paper coving the plate material. Plate feeder can automatically remove it;
4. For feeding plate with automatic plate feeder, if there is any static electricity between the plate material used and lining paper, such plate material cannot be used; otherwise, it may affect the regular work of plate feeder; if it is necessary to use, the lining paper should be taken out.
5. The cutting surface of plate material must be leveled, without flanging and burr; otherwise, it may scuff plate materials or may affect the regular work of plate feeder.

4.7.2 Place Plate Material on Plate Feeding Platform

For the equipment using plate feeding platform, the front surface of plate material should be upward (i.e., the side with emulsion side is upward); the plate material should be centered and moved ahead and right skewed; when touching the front panel, move leftward until touch the locating block of side guide. See Figure 4-7-2.

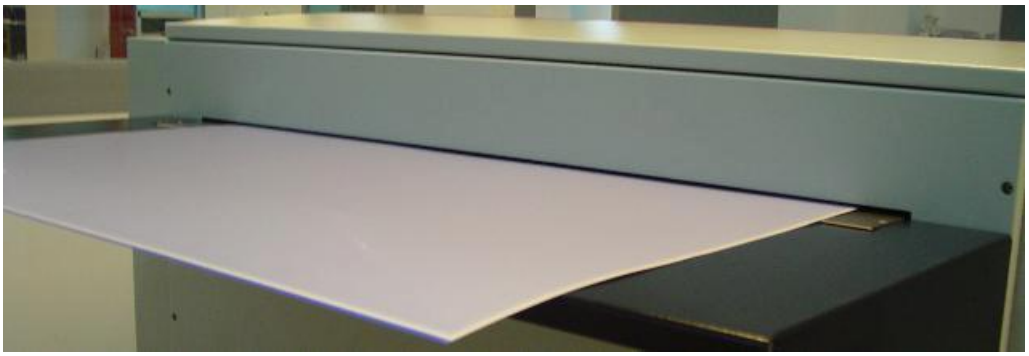


Figure 4-7-2

Specification of plate material supported

Table 4-7-2 Maximum and Minimum Specifications of Plate Material Supported by Devices

LaBoo Model	Maximum Plate Material Size	Minimum Plate Material Size
TP-26/UVP-26	670*560mm	240*320mm
	26.3”*22”	9.4”*12.6”
TP-36/UVP-36	925*660mm	240*340mm
	36.4”*26”	9.4”*13.8”
TP-46/UVP-46	1160*940mm	450*370mm
	45.6”*37”	17.7”*14.6”

Direction of Plate Material

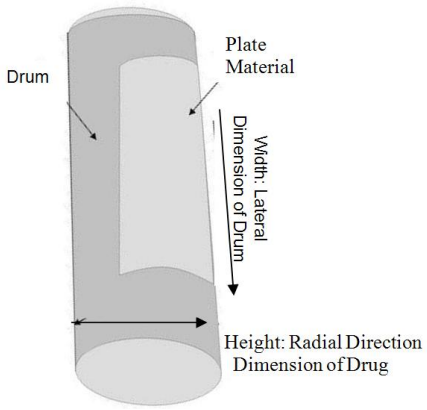


Figure 4-7-3

Important:
Platemaker equipment will not automatically detect the dimension of plate width; if the width dimension mismatches with the setting in output control software, output equipment can operate normally, but may

affect the roll pull guide and dynamic balance and the printing plate output may be incorrect.

4.8 Platemaker running test

Run LaBoo software, and click "Operation" → "Command Function Operation"
Click "Order to Feed Plate" → "Send Command"; at this moment, the plate feeder begins to work; when paper is detected, the paper will be delivered to the paper pile below plate feeder; when plate is detected, the plate will be delivered to the pre-loading plate position.
Click "Order to Load Plate" → "Send Command"; at this moment, the equipment will automatically load plate and the drum will be positioned at the place of plate loading head → open plate head clip, press down plate loading roller → feed plate to front guide → roll pull guide activates, and enable plate to be laterally positioned → open vacuum pump → press down plate loading roller → drum drags the plate and rotates to the place of plate tail → Open Plate Tail Press Plate → drum rotates reversely and feeds plate tail to the plate tail press plate → close plate tail press plate → plate loading roller reset → turn off vacuum pump, plate loading finishes.
Click "Order to Unload Plate" → "Send Command"; at this moment, the equipment will automatically unload the plate and the drum will be positioned at the position of plate unloading → press down loading roller → open unloading plate head and plate head bounces→ drum rotates and feeds plate to chase→ conveyer belt of typeset roller moves synchronously→ when the drum rotates to the plate tail position→ the press plate of plate tail opens and the plate is sent out → loading roller resets → the drum rotates to make plate tail press plate reset → at the same time, typesetting mechanism will convey the plate to crossover.
Precaution:
In the interface of LaBoo program, in the message prompt bar, every process will be promoted with message (as shown in Figure 4-8-1). Issues to be careful include:

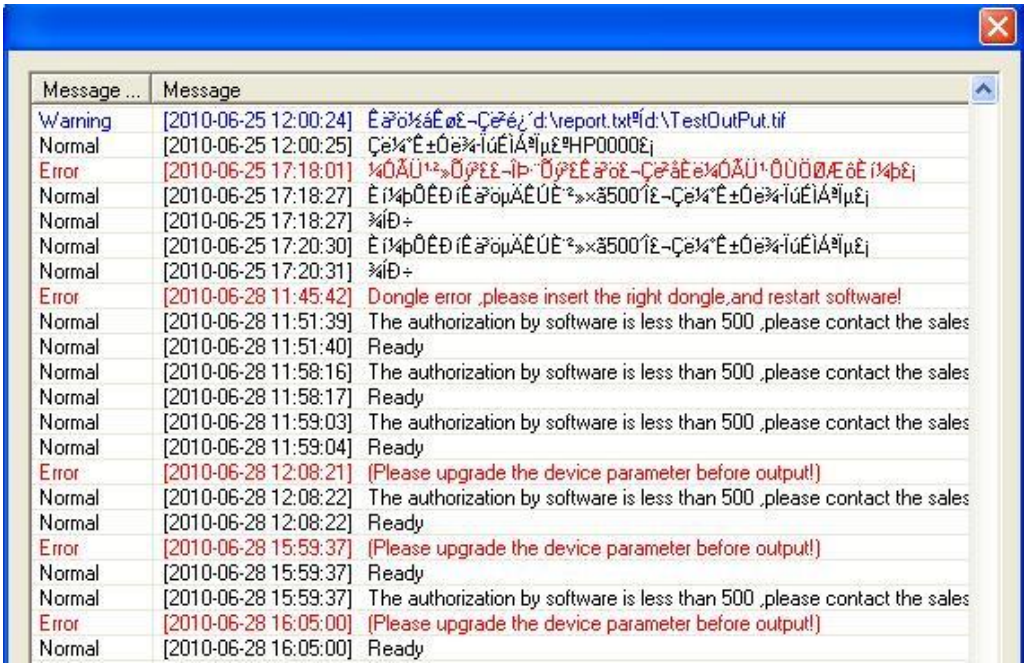

Message ...
Message
Warning [2010-06-25 12:00:24] Ê ä°ö½áÊøÊ¬Çë°é¿´d:\report.txt¹Íd:\TestOutPut.tif
Normal [2010-06-25 12:00:25] Çë¼°Ê±Óë¾·ÌúÉÌÁ³ì£ºHP0000£¡
Error [2010-06-25 17:18:01] ¼ÔÃÜ¹²»ÕÿÊÊ¬Îþ·ÕÿÊÊä°öÊ¬Çë°åÈë¼ÔÃÜ¹·ÔÙÖØÆôÊí¼þÊ¡
Normal [2010-06-25 17:18:27] È í¼þÔÊÐíÊä°öµÄÊÚÈ·¾»×ã500ÎÊ¬Çë¼°Ê±Óë¾·ÌúÉÌÁ³ì£¡
Normal [2010-06-25 17:18:27] ¾íÐ÷
Normal [2010-06-25 17:20:30] È í¼þÔÊÐíÊä°öµÄÊÚÈ·¾»×ã500ÎÊ¬Çë¼°Ê±Óë¾·ÌúÉÌÁ³ì£¡
Normal [2010-06-25 17:20:31] ¾íÐ÷
Error [2010-06-28 11:45:42] Dongle error ,please insert the right dongle,and restart software!
Normal [2010-06-28 11:51:39] The authorization by software is less than 500 ,please contact the sales
Normal [2010-06-28 11:51:40] Ready
Normal [2010-06-28 11:58:16] The authorization by software is less than 500 ,please contact the sales
Normal [2010-06-28 11:58:17] Ready
Normal [2010-06-28 11:59:03] The authorization by software is less than 500 ,please contact the sales
Normal [2010-06-28 11:59:04] Ready
Error [2010-06-28 12:08:21] (Please upgrade the device parameter before output!)
Normal [2010-06-28 12:08:22] The authorization by software is less than 500 ,please contact the sales
Normal [2010-06-28 12:08:22] Ready
Error [2010-06-28 15:59:37] (Please upgrade the device parameter before output!)
Normal [2010-06-28 15:59:37] Ready
Normal [2010-06-28 15:59:37] The authorization by software is less than 500 ,please contact the sales
Error [2010-06-28 16:05:00] (Please upgrade the device parameter before output!)
Normal [2010-06-28 16:05:00] Ready

Figure 4-8-1

a. System temperature measurement: rack temperature (XX.XX degrees); laser box (YY.YY degrees)
As specified in LaBoo4.XX software, the system will read equipment temperate from the third second after

the software is started; after that, the system will read the temperature every 10 minutes. If the temperature of laser box is greater than 32℃ or lower than 18℃; or the ambient temperature is lower than 10℃ or greater than 40℃, the equipment will stop to work.
In normal conditions, if the laser power remains unchanged, the light will be locked every 30 minutes, mainly to improve the output efficiency, especially for small plate; when template, laser power, resolution change and focal length and power are adjusted, the exposure speed shall be changed and light locking will be started immediately if command is sent (≥ 5 times) or in engineer mode; when the temperature of laser box is <23.5℃ or the temperature of laser box is >26.5℃, every plate should lock light.
b. The plate tail position before plate loading should comply with the provisions in Table 4-8-1;
c. The plate tail position after plate loading should comply with the provisions in Table 4-8-1;
d. The measured length of plate, template deviation, and plate tail slope deviation should comply with the provisions in Table 4-8-2;

Table 4-8-1: Allowable Range of Plate Tail Position before and after Plate Loading

Model	Plate Height	Plate Tail Position before plate loading	Plate Tail Position after plate loading
TP/UV46	H	(H+10)*11.111±20	H*11.111±10
TP/UV36	H	(H+10)*10. ±20	H*10. ±10
TP/UV26	H	(H+10)*9.259±20	H*9.259±10
Note: For the version after LaBoo4.xx, H+10; for the version before 3.XX, H+15.			

Table 4-8-2: Program Regulations on Plate Length Standard, Skewness, Temperature, and Light-locking Conditions

Item	Working Condition/Allowable Range
Skewness standard	<±4 digits
Plate length standard	<±10 digits
Temperature range (measuring every 10 minutes)	Rack: 10~40℃; laser box: 18~32℃
Light-locking condition	In normal conditions, if the laser power remains unchanged, the light will be locked every 30 minutes, mainly to improve the output efficiency, especially for small plate; when template, laser power, resolution change and focal length and power are adjusted, the exposure speed shall be changed and light locking will be started immediately if command is sent or in engineer mode; when the temperature of laser box is <23.5℃ or the temperature of laser box is >26.5℃, every plate should lock light.

4.9 Platemaking Output

Focal length testing: Determine the optimal focal length parameters according to the plate material selected by client; refer to Appendix 1 of LaBoo Instruction;
Power testing: Determine the optimal focal length parameters according to the plate material selected by client; refer to Appendix 2 of LaBoo Instruction;
Check the blank pressing of plate head and plate tail; the blank pressing of plate head is 6mm and that of plate tail is 4~5mm;
Start output job.

4.10 Plate Material Developing

The plate material exposed by platemaker should be developed.
For more information about the developing conditions for plate material, please refer to the description on CRON qualified plate material.

4.11 Abnormal Information Prompting

For various abnormities, see the chapter on Abnormal Condition Analysis and Handling.

5. Repair and Maintenance

In order to exert the optimal performance of equipment, equipment must be maintained periodically. The following are the recommended maintenance cycle and details concerned. Failure to follow the provisions may affect the performance of machine and even damage the machine. Maintenance is divided into daily maintenance and regular maintenance. The precondition is the equipment shall be in the standard environment as required in the Installation Guide.

Attention

Make sure the power of machine is turned off before maintenance.

5.1 Service Time

Table 5-1-1 Table of Equipment Service Time

Part	Description	MTN Detail	Cycle	Regular Replacement
equipment surface	equipment surface	clean	Every week	
lens surface	lens surface	clean	Every month	
drum	drum surface	clean	every two months	
screw bar	screw bar surface	oiling	every three months	
front/back guide rail	guide rail surface	oiling	every three months	
tension spring component of plate head/tail			6 months	replace
left/right tension spring of plate tail gear			6 months	replace
rubber roller 3			12 months	replace
air pump solid-state relay (heat sensitive)			12 months	replace
air filter element			12 months	replace
screw bar nut of side guide*			18 months	replace
050422 reverse spring			18 months	replace
070428 reverse spring			18 months	replace
left/right tensional spring of balance block			24 months	replace
safety switch touch board			24 months	replace
safety switch lock blade			24 months	replace
shaft coupling wire			24 months	replace
stop electromagnet draw			24 months	replace

hook				

Note: The recommended timetable assumes that the equipment is in the standard environment as required in the Installation Guide.

Table 5-1-2 Items to be Inspected Every Day

Equipment inspection	Inspection Cycle
Ambient temperature	every day
Ambient humidity	every day
Is the blank pressing of plate head and tail correct after processing plate?	every day
Is there any change to vacuum pressure sensor?	every day
Is the sound normal during the working process of equipment?	every day
Check laser power to see if there is any change?	every week

5.2 Daily Maintenance

5.2.1 Check Ambient Temperature

Check ambient temperature every day.

5.2.2 Check Ambient Humidity

Check ambient humidity every day.

5.2.3 Check Edging of Plate Head and Tail

After processing plate, check whether the blank pressing of plate head and tail is correct every day (Figure 5-2-1), mainly check whether the blank pressing is in parallel with drum bus; if not in parallel, press down the shaft on the plate tail swing arm of right (left) side and enable the latch of plate tail pressing plate on the end to open, rotate drum body and put down after adjusting to the position; push plate tail slighting to determine that the plate tail lock is positioned (refer to Figure 5-2-2). The nonparallel of plate tail pressing plate is mainly caused by artificial hard pulling after plate loading fails.

Figure 5-2-1

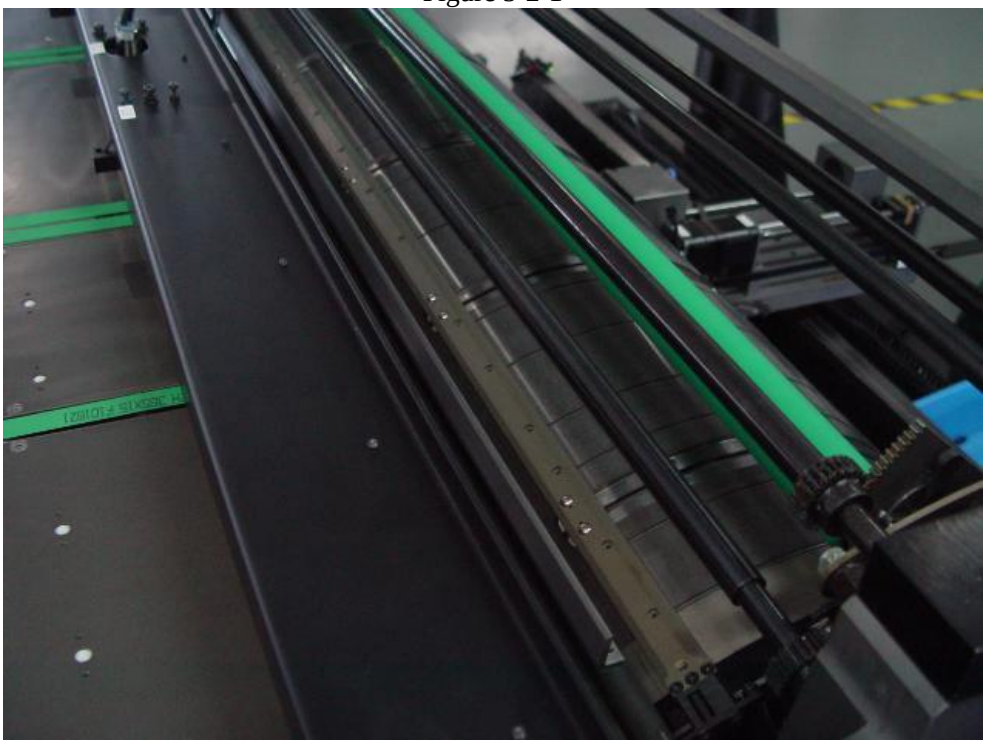


Figure 5-2-2

5.2.4 Check Vacuum Pressure Sensor

Vacuum pressure sensor should be checked every day to see if there is any change.

5.2.5 Clean Plate Feeding Platform and Inside of Plate Inlet

The plate feeding platform and the inside position close to plate inlet should be wiped with non-woven fabrics and ethanol before work every day to reduce the dust of drum surface.

5.2.6 Check Sound in Equipment Working Process

Check the sound in the working process of equipment every day to see if it is normal.

5.3 Regular Maintenance

5.3.1 Check Laser Power

Check laser power every day to see if it is changed (refer to CTP Laser Control LaserAdjust 3.64 Operating

Instruction) and send the testing data to CRON customer service department.

5.3.2 Clean Equipment Surface

Clean the surface of equipment every week.

Way of Cleaning and Precautions:
When clean the surface of the machine, first use dust collector to absorb the dust at the joint of all machine covers and plate box. If the indoor air is dry and clean and the machine is wiped frequently, the surface dust can be wiped out just with dry cloth; in case of thorough cleaning, wet cloth and soft cleanser shall be used and the cleanser should be cleaned with clean wet cloth.

Caution
Do not let water and cleanser flow into the inside of machine so as to prevent from the damage to human body and equipment.
Important: It is strongly recommended that the following maintenance should be conducted by trained engineer or under the guidance of engineer.

5.3.3 Clean Equipment Inside

Clean the inside of the plate feeder every four weeks:
Separate platemaker from plate feeder:
Move away plate box and place at safe place; remove the right cover of platemaker and the power cord and communication cable of plate feeder; rotate the supporting leg of plate feeder clockwise and make it move upward with the castor to support the equipment; push away plate feeder; move off the top cover of plate feeder; at this time, clean plate feeding roller group and plate feeding guide plate (refer to Figure 5-3-1 and Figure 5-3-2); after cleaning, put back the top cover of plate feeder. Ensure the part contacted clean during the transportation of plate material.

Figure 5-3-1

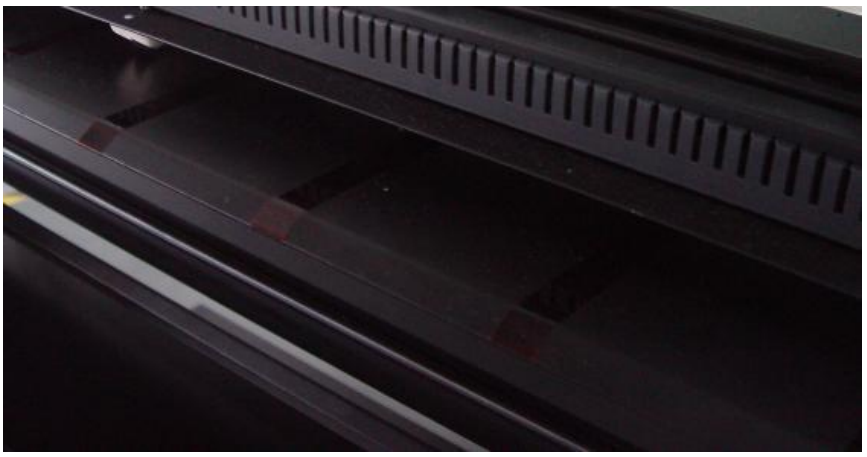


Figure 5-3-2

Put back the cover of top enclosure.

Clean the inside of mainframe

Lift up the front cover of top enclosure and the back cover of top enclosure and place them properly. Clean: Plate feeding guide plate, plate loading roller, drum surface, especially the pressing plate of plate head and the pressing plate of plate tail; publishing guide plate; after cleaning publishing roller group, put back the top cover (Refer to Figure 5-3-3).

Note: When cleaning above parts, be sure to use unshed cotton cloth or unshed clean paper.

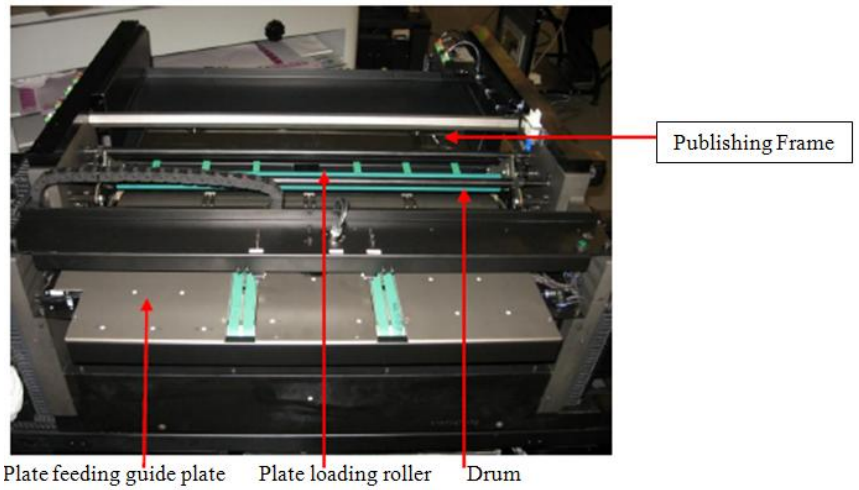


Figure 5-3-3

5.3.4 Clean lens surface

Clean the surface of lens once a month.

Remove the external enclosure of mainframe and separate the platemaker from plate feeder; lift up the front cover of top enclosure and the back cover of top enclosure and place them properly. Unscrew the fixing screws of the front top cover and slowly move away the front top cover; unscrew the fixed screws of back top cover and slowly move away back top cover; unscrew the screws of the right top cover and move away right top cover and plug off the power source of emergency stop switch, take away right top cover and put it in a safe place.

Wiping

Rotate the connection flange between screw bar and motor with hand to enable the scanning platform to move rightward to the limit location; at this moment, dip some cleanser with cotton ball and wipe the lens along one direction, then clean the cleanser; after cleaning, rotate the connection flange of screw bar reversely and enable the scanning platform to move ahead of the original position.

Caution: The cotton ball should be continuous fiber unshed cotton ball. The lens cleanser shall be mixed with

90% ethanol and 10% aether.

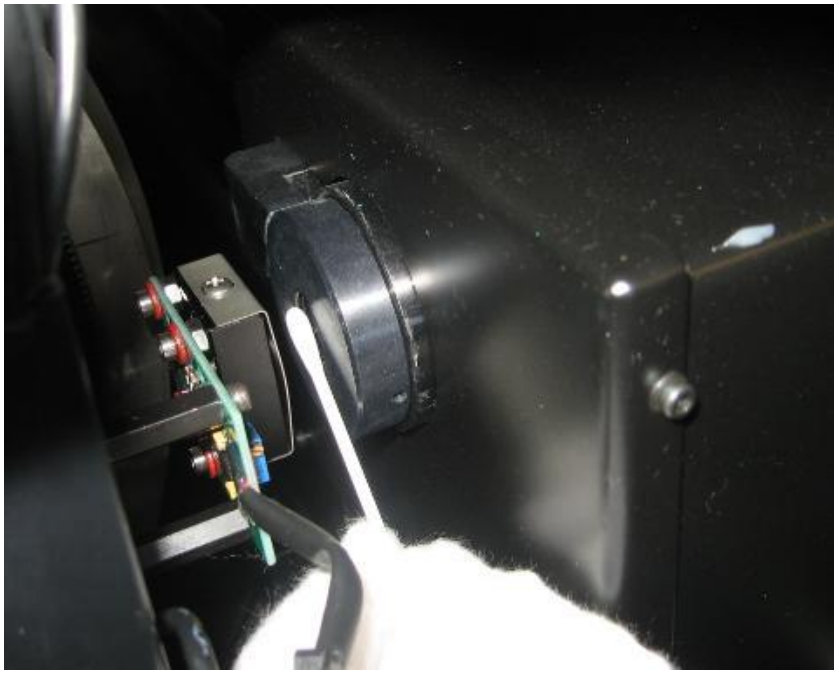


Figure 5-3-4

5.3.5 Clean the Drum

Clean the drum once a month.
Mode:
Use a spot of ethanol on a nonwoven cloth to wipe the surface of drug gently and evenly, especially pay attention to keeping the location of slide guide channel of plate tail clean, thus favorable to the adjustment of plate tail.
Reinstall.

5.3.6 Clean Screw Bar and Guide Rail

Clean screw bar and guide rail every three months.
Mode:
Remove the left and right enclosures of the mainframe. For the way of removal, please refer to section 5.3.4. During removal, pay attention to pull out the connection line of the emergency button; unscrew the four fixed screws on the chase; pull out the power and signal lines of motor; two persons take off chase in parallel simultaneously and place it at safety and clean place; then begin to clean:
A. Lay rags in parallel below screw bar to prevent oil from outflow;
B. Prepare a bottle of kerosene and a brush (unshed brush), and white special lubricating grease;
D. Enter LaBoo program "Command Function Operation" → Click "Platform Move" → "Send Command", make recording head move; at the same time, clean the oil stain with brush dipped with kerosene (platform move command must be executed for several times);
E. Use clean cotton cloth to wipe the surface of screw bar again;
F. Apply lubricating grease on the surface of screw bar after cleaning;
G. Clean the surface of the front and back guide rails and then wipe with new oil grease;
H. Reinstall the removed enclosure in turn after completing this work.
G. In "Command Function Operation" → Click "Screw Bar Clean and Lubrication Reset", select "Reset Number of Service Days Recorded"; after confirmed, complete screw bar, guide rail cleaning, and oiling.
Caution: Connect the power line at the left and right sides of emergency switch.

5.3.7 Clean Filter Screen of Clean Air Input Part

Clean the filter screen of air purification part every three months.
Mode:
Remove the front top cover and back lower cover (pull out the connection line of fan during removal), then remove right lower enclosure. The clean air box installed with filter can be observed, see Figure 5-3-5 and Figure 5-3-6. Take off filter element cover and take out filter element; remove the dust on filter element with dust collector; after cleaned, reinstall the filter element; if the ventilation effect of filter element is problematic, it is recommended to replace the filter element. Filter element shall be replaced once a year.

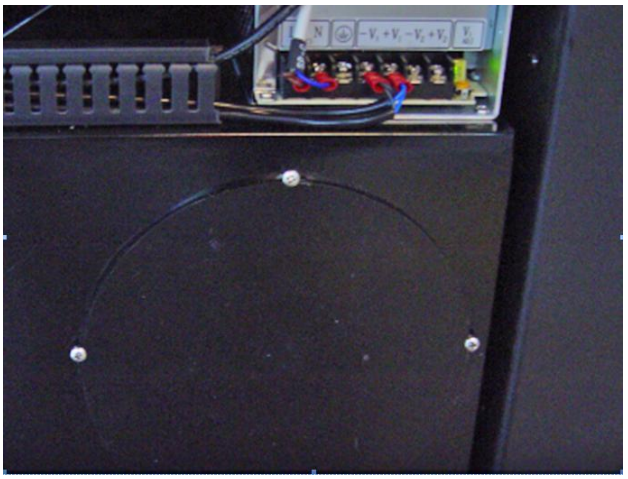


Figure 5-3-5: Clean Air Box of TP46, TP36

Figure 5-3-6: Clean Air Box of TP26

5.3.8 Repair and Maintenance of Vacuum Pump

For the repair and maintenance, refer to the operating instruction for vacuum pump.

5.3.9 Description on Replacement of Plate Head and Tail Tension Spring

Note: In the entire operating process, operator must wear clean gloves and always pay attention to the protection of drum. Do not collide with the surface of drum with tools or parts and components!
Description on Procedures:

5.3.9.1 Replace plate head drag spring component

Machine enclosure dismantling: Disconnect power supply, remove the top cover and the front top cover according the sequence of the top cover and the front top cover; loosen the screws on the front top cover, remove the front cover and front cover cap; the front cap of top cover and front top cover should be put in the place padded with clean paper or cloth after removal; the surface of the enclosure should not be collided;
Plate head tensional spring dismantling: Rotate drum, rotate the plate head tensional spring components (TP33-1270-H) (TP36/TP26 uses the plate tail tensional spring component of TP33-1270-T) to the front of the machine; hold the drum with one hand, and remove plate head tensional spring components from plate head bolt spring with pull-spring wrench with another hand as shown in Figure 5-3-7, then take out plate head tensional spring components from plate head swing arm;

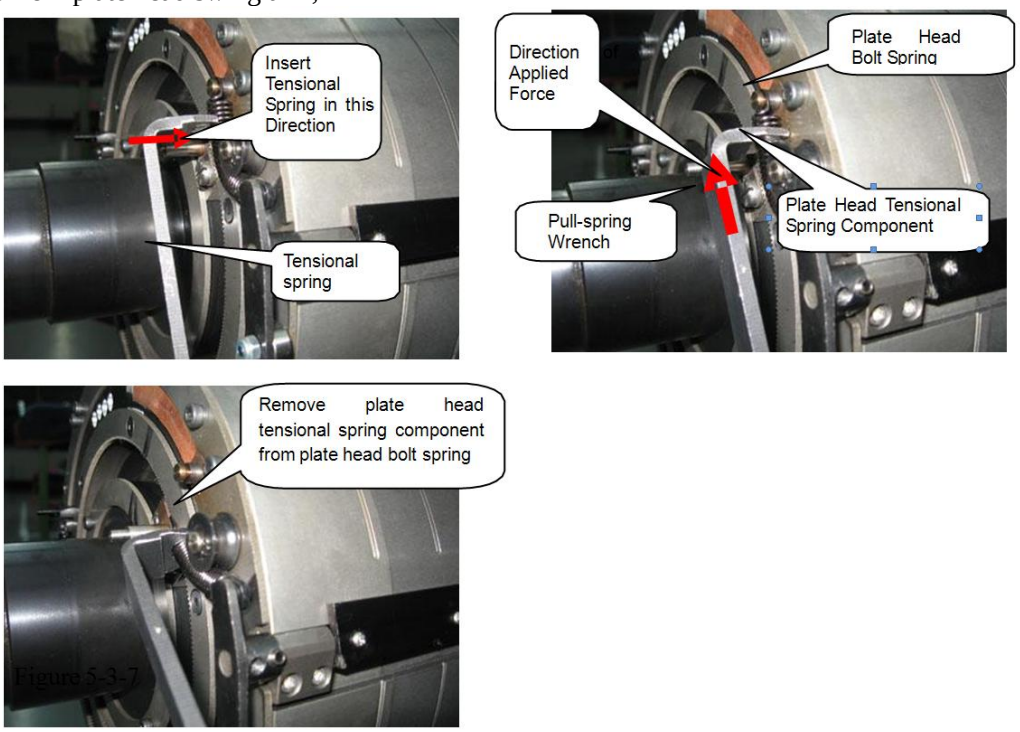
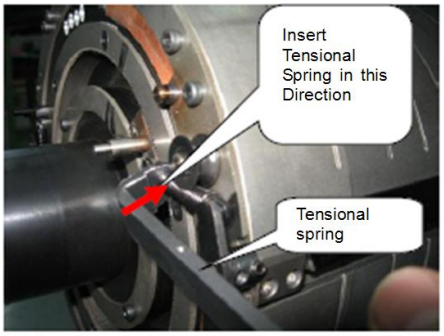
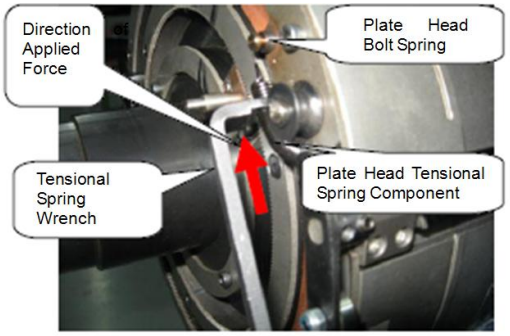

Insert Tensional Spring in this Direction
Tensional spring
Direction Applied Force
Plate Head Bolt Spring
Pull-spring Wrench
Plate Head Tensional Spring Component
Remove plate head tensional spring component from plate head bolt spring
Figure 5-3-7

Figure 5-3-7

Installation of plate head tensional spring: Put plate head swing-arm on the plate head puller on the new plate head tensional spring component and latch on plate head tensional spring component buckle up plate head bolt spring with tensional spring wrench as shown in Figure 5-3-8;





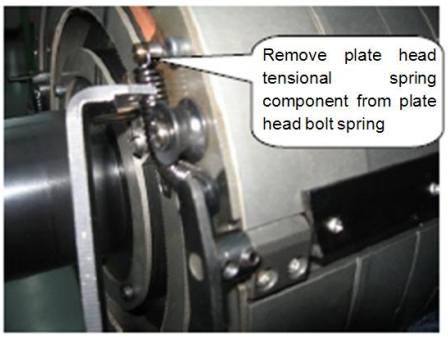


Figure 5-3-8

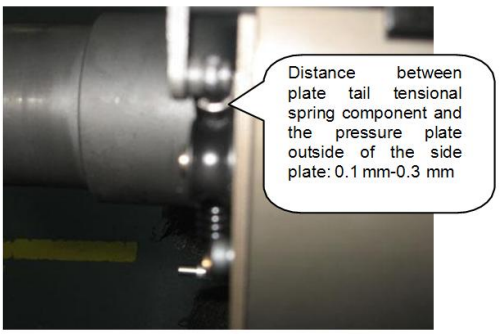


Figure 5-3-9

Inspection: Check the distance between plate head tensional spring component and the pressure plate outside of the side plate with plug gauge; the distance should be 0.1mm-0.3mm as shown in Figure 5-3-9;
Enclosure installation: Fit on the front top cover with the removed screws; then place back the front cap of top cover and top cover in the sequence of front cap of top cover and top cover properly.

5.3.9.2 Replace plate tail drag spring component

Machine enclosure dismantling: Disconnect power supply, remove the top cover and the front top cover according the sequence of the top cover and the front top cover; loosen the screws on the front top cover, remove the front cover and front cover cap; the front cap of top cover and front top cover should be put in the place padded with clean paper or cloth after removal; the surface of the enclosure should not be collided;
Plate head tensional spring dismantling: Rotate drum, rotate the plate head tensional spring component to the front of the machine; hold the drum with one hand, and remove plate head tensional spring components (TP33-1270-T) from plate head bolt spring with pull-spring wrench with another hand as shown in Figure 5-3-10, then take out plate head tensional spring components from plate head swing arm;

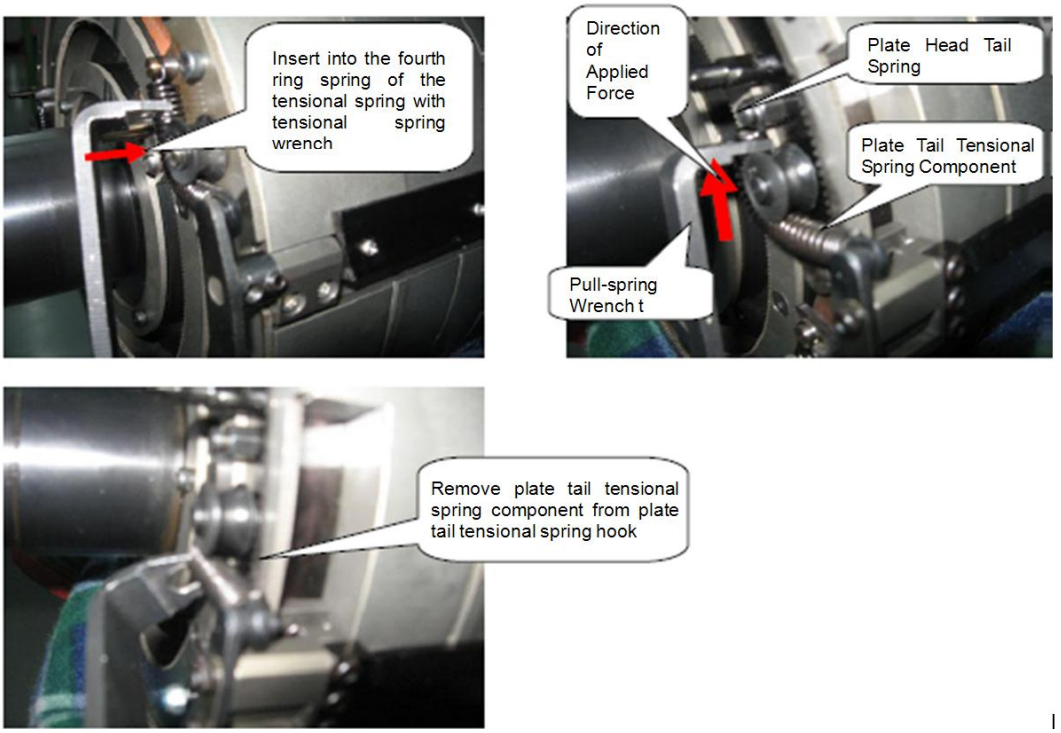

Insert into the fourth ring spring of the tensional spring with tensional spring wrench
Direction of Applied Force
Plate Head Tail Spring
Plate Tail Tensional Spring Component
Pull-spring Wrench t
Remove plate tail tensional spring component from plate tail tensional spring hook

Figure 5-3-10

Installation of plate tail tensional spring: Put the pull head of plate head on the drag spring component of new plate tail on plate tail swing arm, and buckle up plate tail tensional spring component on plate tail spring hook with tensional spring wrench as shown in Figure 5-3-11;

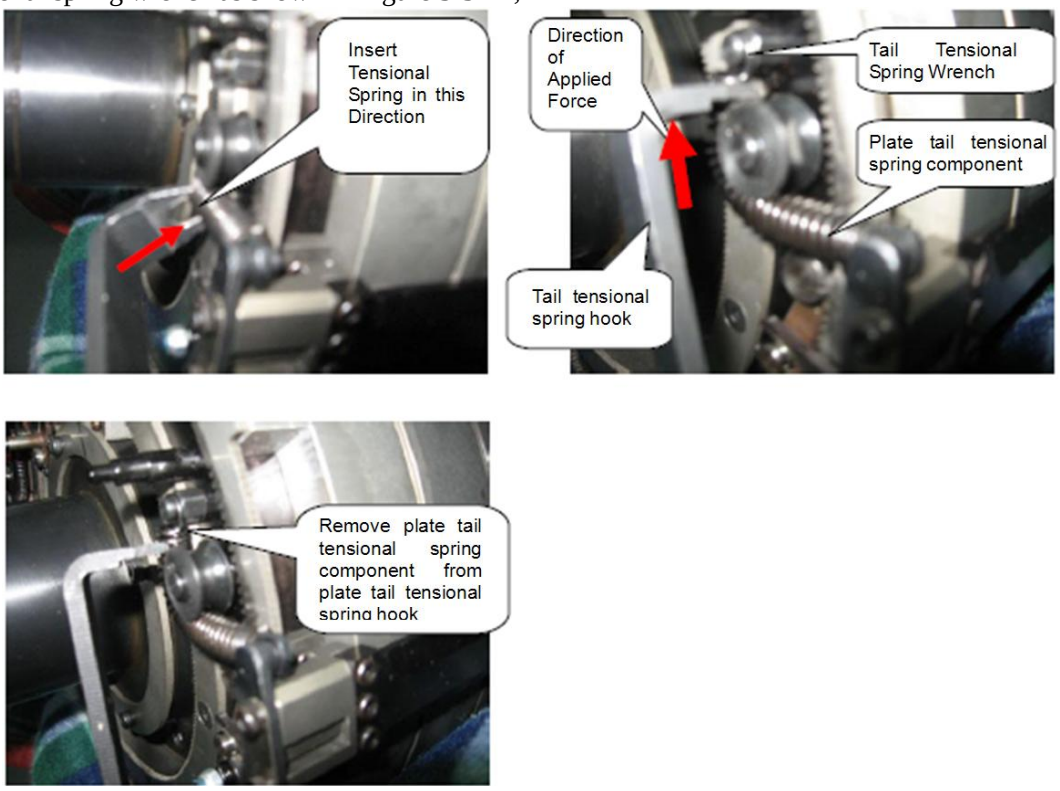

Insert Tensional Spring in this Direction
Direction of Applied Force
Tail Tensional Spring Wrench
Plate tail tensional spring component
Tail tensional spring hook
Remove plate tail tensional spring component from plate tail tensional spring hook

Figure 5-3-11

Check: check the distance between the drag spring component of plate tail and the pressing plate outside the side plate with plug gauge; the distance should be 0.1mm-0.3mm as shown in Figure 5-3-12;

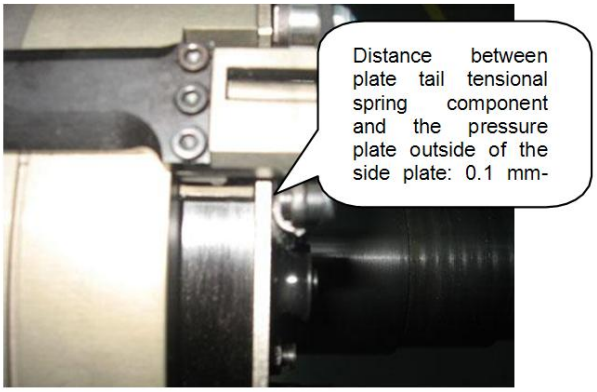


Figure 5-3-12

Enclosure installation: reinstall the front top cover with the removed screws, and then reinstall the front cap of top cover in the sequence of front cap of top enclosure and top enclosure.

Attached Table 5-3-9: TP46/UVP46 Parts and Components

No.	Name	Drawing Number	Qty.	Remark
1	plate head drag spring component	TP33-1270-H	2	
2	plate tail drag spring component	TP33-1270-T	2	

Attached Table 5-3-10: TP36/UVP36/TP26/UVP26 Parts and Components

No.	Name	Drawing Number	Qty.	Remark
1	Plate tail tensional spring	TP33-1270-T	4	

Attached Table 5-3-11: List of Tools

No.	Name	Code Number/specification /model	Qty.	Remark
1	HEXAGON SOCKET KEY WITH T-HANDLE	3mm, 4mm	1 for each	
2	Tensional spring wrench	CTP-GZ-12	1	
3	Plug meter	0.1mm-0.4mm	1 set	

Attached Table 5-3-12: Table of Common Wrong Assembly

No.	Assembling Error	Fault Caused	Handling Method	Remark
1	No clearance between tensional spring component and external pressing plate of side plate	Cause fault/plate tail open failure	Adjust the distance between tensional spring component and the pressing plate outside of the side plate: 0.1mm-0.3mm	
2	Install plate tail tensional spring component at the place for installing plate head tensional spring component; install plate head tensional spring component at the place for installing plate tail tensional spring component	Cause plate head/plate tail failure	There are 29 rounds for the spring of the plate head tensional spring component; for TP 46 machine, the plate head swing-arm component shall install plate head tensional spring component; there are 25 rounds for plate tail tensional spring component; TP46 plate tail swing-arm component, TP36/TP26 plate head swing-arm component, TP36/TP24 plate tail	

			swing-arm component, etc. shall install plate tail tensional spring component.	

Refer to the process file of mechanical assembly:
1. Drum Part TP26-GY001GGB;
2. Drum Part TP36-GY001GGB;
3. Drum Part TP46-GY001GGB.

6. Abnormal Condition Analysis and Handling

6.1 Error-reporting Information

The error-reporting information in the working process of platemaker is composed of two parts: software error-reporting information and hardware error-reporting information. For software error-reporting information, refer to LaBoo Operating Instruction;
For hardware error-reporting information, during the running process of equipment, if the process is error, the information bar of software will display error information code and pop up the picture associated with the fault, and indicate the possible cause of the fault.
Each process has a default prompting message, called 'default', representing the last four digits. If there is no corresponding value during error reporting process, default will be used for replacement, which may be any four-digit value.

6.1.1 Error-reporting Information in Equipment Self-test Process

Table 6-1-1: Error-reporting Information in Equipment Self-test Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Equipment self-test process			
Default	Equipment self-test error: Control process error caused by unknown reason; please carefully check, or turn off the machine and restart and try again!		
0000 0001	Equipment self-test error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	◆
0000 0003			
0000 0006	Equipment self-test error: possibly plate head clamp right unloading point or reset sensor or motor driver fault	◆	◆
0000 0008			
0000 0011	Equipment self-test error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	◆
0000 0013			
0000 0017	Equipment self-test error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	◆
0000 0019			
0000 0023	Equipment self-test error: possibly right dynamic balance adjusting drive motor or reset sensor or motor driver fault	◆	◆
0000 0026	Equipment self-test error: possibly left dynamic balance adjusting drive motor or reset sensor or motor driver fault	◆	◆
0000 0039	Equipment self-test error: Possibly failure of side gauge drive motor or reset sensor or motor driver	◆	◆
0000 0042			
0000 0043			

0000 0045	Equipment self-test error: possibly laser head drive motor or reset sensor or motor driver fault	◆	◆
0000 0048			
0000 0049			
0000 0051	Equipment self-test error: possibly lens drive motor or reset sensor or motor driver fault	◆	◆
0000 0054		◆	
0000 0055		◆	◆
0000 0056			◆
0000 0057	Equipment self-test error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆
0000 0059	Equipment self-test error: possibly plate head clamp unloading point drive motor or reset sensor or motor driver fault		◆
0000 0061			
0000 0063			
0000 0058	Equipment self-test error: possibly light angle drive motor or reset sensor or motor driver fault	◆	
0000 0061			
0000 0062			
0000 0063	Equipment self-test error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	
0000 0064			◆
0000 0070		◆	
0000 0066	Equipment self-test error: possibly plate tail clamp drive motor or reset sensor or motor driver fault		◆
0000 0068			
0000 0070		◆	
0000 0065	Equipment self-test error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	
0000 0067			
0000 0069			
0000 0072	Equipment self-test error: possibly plate head clamp unloading point drive motor or reset sensor or motor driver fault	◆	
0000 0074			
0000 0076			
0000 0072	Equipment self-test error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆
0000 0077		◆	
0000 0079	Equipment self-test error: possibly unloading roller drive motor or reset sensor or motor driver fault		◆
0000 0081			
0000 0083	Equipment self-test error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆
0000 0079	Equipment self-test error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	
0000 0081			
0000 0083			
0000 0085	Equipment self-test error: possibly plate head clamp drive motor or reset sensor or motor driver fault		◆
0000 0087			
0000 0089			
0000 0085	Equipment self-test error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	
0000 0085	Equipment self-test error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	
0000 0085			
0000 0085			

6.1.2 Error-reporting Information in Drum Resetting Process

Table 6-1-2: Error-reporting Information during Drum Reset Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Drum reset process			
Default	Drum reset process error: Control process error caused by unknown reason, please carefully check, or shut down and restart the machine and retry!		
0001 0001	Drum reset error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	◆
0001 0003			
0001 0006	Drum reset error: possibly plate head clamp unloading point drive motor or reset sensor or motor driver fault	◆	◆
0001 0008			
0001 0011	Drum reset error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	◆
0001 0013			
0001 0017	Drum reset error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	◆
0001 0019			
0001 0023	Drum reset error: possibly right dynamic balance adjusting drive motor or reset sensor or motor driver fault	◆	◆
0001 0026	Drum reset error: possibly left dynamic balance adjusting drive motor or reset sensor or motor driver fault	◆	◆
0001 0028	Drum reset error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆

6.1.3 Error-reporting Information in Automatic Plate Loading Process

Table 6-1-3:Error-reporting Information during Automatic Loading Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Auto plate loading process			
Default	Auto loading error: Control process error caused by unknown reason, please carefully check, or shut down and restart the machine and try again		
0002 0001	Auto loading error: possibly plate still stays at printing rack, or printing rack cassette empty detection probe invalid	◆	◆
0002 0006	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	
0000 0007	Auto loading error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	
0000 0010	Auto loading error: possibly roll pull guide in-place probe invalid	◆	
0002 0011	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆

0002 0012	Auto loading error: possibly plate head clamp drive motor or reset sensor or motor driver fault		◆
0002 0015	Auto loading error: possibly roll pull guide in-place probe invalid		◆
0002 0023	Auto loading error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	
0002 0027			◆
0002 0031	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	
0002 0033			◆
0002 0033	Auto loading error: possibly plate head clamp drive motor or reset sensor or motor driver fault	◆	
0002 0036			◆
0002 0036	Auto loading error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	
0002 0039			◆
0002 0037	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	
0002 0038	Auto loading error: possibly the plate is still at the loading entrance, loading plate	◆	
0002 0040	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆
0002 0041	Auto loading error: possibly the plate is still at the loading entrance, loading plate		◆
0002 0041	Auto loading error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	
0002 0044			◆
0002 0043	Auto loading error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	
0002 0046	Auto loading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off		◆
0002 0048	Auto loading error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	
0002 0050			◆
0002 0051	Auto loading error: possibly fault of unloading pressure roller drive motor or reset sensor or motor driver	◆	
0002 0053			◆

6.1.4 Error-reporting Information in Automatic Plate Unloading Process

Table 6-1-4: Error-reporting Information in Automatic Plate Unloading Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Auto plate unloading process			
Default	Auto plate-unloading error: Control process error caused by unknown reason, please carefully check, or shut down and restart the machine and try again		
0003 0000	Auto plate-unloading error: possibly plate still stays at crossover, or plate processor shut down or plate processing error	◆	◆
0003 0001	Auto plate-unloading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆

0003 0003	Auto plate-unloading error: possibly plate head clamp unloading point drive motor or reset sensor or motor driver fault	◆	◆
0003 0004	Auto plate-unloading error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	◆
0003 0006	Auto plate-unloading error: possibly plate head clamp unloading point drive motor or reset sensor or motor driver fault	◆	◆
0003 0009	Auto plate-unloading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆
0003 0010	Auto plate-unloading error: possibly plate head does not reach printing rack during unloading plate, or printing rack cassette empty detection probe invalid	◆	◆
0003 0011	Auto plate-unloading error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	◆
0003 0013	Auto plate-unloading error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	◆
0003 0015	Auto plate-unloading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆
0003 0018	Auto plate-unloading error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	◆
0003 0020	Auto plate-unloading error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆

6.1.5 Error-reporting Information in Automatic Plate Rejection Process

Table 6-1-5: Error-reporting Information in Automatic Plate Rejection Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Automatic Plate Withdrawal Process			
Default	Auto plate withdrawal error: Control process error caused by unknown reason, please carefully check, or shut down and restart the machine and try again		
0004 0001	Auto plate withdrawal error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆
0004 0002			
0004 0005	Auto plate withdrawal error: possibly unloading roller drive motor or reset sensor or motor driver fault	◆	◆
0004 0008	Auto plate withdrawal error: possibly fault of drive motor for loading plate head clamp/loading point or reset sensor or motor driver	◆	◆
0004 0012	Auto plate withdrawal error: possibly fault of drive motor for loading plate head clamp/loading point or reset sensor or motor driver		◆

6.1.6 Error-reporting Information in Accuracy Adjustment Process

Table 6-1-6:Error-reporting Information during Accuracy Adjustment

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Precision Adjustment Process			
Default	Precision adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart the machine and try again		
0005 0001	Precision adjustment error: possibly laser head drive motor or reset sensor or motor driver fault		◆
0005 0002	Precision adjustment error: possibly light head angle drive motor or reset motor or motor driver fault	◆	
0005 0007	Precision adjustment error: possibly laser head drive motor or reset sensor or motor driver fault	◆	
0005 0008	Precision adjustment error: possibly lens drive motor or reset sensor or motor driver fault		◆
0005 0011			
0005 0014		◆	
0005 0017			

6.1.7 Error-reporting Information in Plate Tail Adjustment Process

Table 6-1-7: Error-reporting Information in Plate Tail Adjustment Process

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Plate Tail Adjustment Process			
Default	Plate tail adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart and retry		
0006 0000	Plate tail adjustment error: possibly drum motor emergency stop locked or motor driver self-protection or motor power off	◆	◆
0006 0002	Plate tail adjustment error: possibly plate tail clamp drive motor or reset sensor or motor driver fault	◆	◆
0006 0005			

6.1.8 Error-reporting Information in Balance Block A Adjustment Process

Table 6-1-8: Table of Error Message

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Balance Block A Adjustment Process			
Default	Balance block A adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart and retry		
0007 0000	Balance block A adjustment error: possibly drum motor emergency stop locked or	◆	◆

0007 0001	motor drive self-protection or motor power-off		
0007 0002			
0007 0004	Balance block A adjustment error: possibly right dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0007 0006	Balance block A adjustment error: possibly left dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0007 0009	Balance block A adjustment error: possibly drum motor emergency stop locked or motor drive self-protection or motor power-off	◆	◆
0007 0010	Balance block A adjustment error: possibly right dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0007 0012	Balance block A adjustment error: possibly left dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆

6.1.9 Error-reporting Information in Balance Block B Adjustment Process

Table 6-1-9: During Balance Block B Adjustment: Table of Error Message

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Balance Block B Adjustment Process			
Default	Balance block B adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart		
0008 0000	Balance block B adjustment error: possibly drum motor emergency stop locked or motor drive self-protection or motor power-off	◆	◆
0008 0001			
0008 0002			
0008 0004	Balance block B adjustment error: possibly right dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0008 0006	Balance block B adjustment error: possibly left dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0008 0009	Balance block B adjustment error: possibly drum motor emergency stop locked or motor drive self-protection or motor power-off	◆	◆
0008 0010	Balance block B adjustment error: possibly right dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆
0008 0012	Balance block B adjustment error: possibly left dynamic balance adjustment drive motor or reset sensor or motor driver fault	◆	◆

6.1.10 Error-reporting Information in Focal Length Temperature Compensation Adjustment Process

Table 6-1-10: Focus Temperature Compensation Adjustment: Table of Error Message

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Focus Temperature Compensation Adjustment Process			
Default	focal length temperature compensation adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart		
0009 0001	focal length temperature compensation adjustment error: possibly lens drive motor or reset sensor or motor driver fault	◆	◆
0009 0004			

6.1.11 Error-reporting Information in Side Guide Adjustment Process

Table 6-1-11 Table of Error Message Appeared during Side Guide Adjustment

Error Code	Error Message, Possible Cause of Error	Model	
		26/36	46
Side gauge adjustment process			
Default	Side gauge adjustment error: Control process error caused by unknown reason, please carefully check, or shut down and restart and retry		
0010 0001	Side gauge adjustment error: Possibly failure of side gauge drive motor or reset sensor or motor driver		◆

6.2 Image Quality Problem and Processing Scheme

During publication, if quality problem is found on the makeup, the possible causes may be:
Computer: Computer compatibility problem, computer infected by virus, etc.;
Plate making machine: Departure from focus, incorrect power, blur on drum, out-of-control of laser, oil shortage for guide rail of screw bar, or improper adjustment on mechanism;
Plate processor: Irrational configuration of developing temperature and speed, maintenance problem resulting in device inability to operate, improper adjustment on roller and brush pressure, and irrational proportioning of replenishing liquid;
Plate: The sealing hole of plate is poor; photosensitive emulsion is unevenly applied; the flatness of plates goes beyond standard; the margin of plate is irregular and unsuitable for the plates of platemaking machine.

Table 6-2-1: Image Quality Problem and Handling Mode

	Image Quality Problem	Cause	Solution
1	out of register	Left-right non-alignment: The left side of the plate is not accurately positioned; the pressure of the roller wheel on roll pull guide is no enough. Scanning platform is accurately positioned. Screw rod and motor coupling are loosened. For C type machine, possibly the clearance between roll pull guide nut and screw bar is too larger. Front-rear nonalignment, or oblique During plate loading, the transportation resistance is too large, such as the electrostatic on plate loading platform or plate with severe electrostatic; If any plate feed, check the difference between the register prevision of 650×550 plate and 1030×800 plate.	Adjust pressure or replace, refer to the Procedure for Integrated Testing Screw up fixing screws Make sure the clearance between roll pull guide nut and screw bar is <0.01 mm Mop guide plate with alcohol, or remove with electrostatic remover; Check to see if the plate loading height of the guide plate of plate feed and mainframe is consistent. If there is no problem with the register of small plate, then big plate has problem. The friction resistance of side plate feeder is too large. Please contact CRON customer service department.
2	make-up with bottom ash, make-up with bottom ash, which cannot be cleaned	Equipment problem Incorrect focus Inappropriate power Problem of plate developing machine Incorrect developing temperature or time Incorrect operating state of plate developing machine Plate problem Incorrect sensitivity of plate Incorrect hole sealing of plate	Make sure the conformity of the plate used by customer. Check the actual thickness of plate, send focusing chart, make sure optimal focal distance, and appropriate power. Confirm the maintenance of plate developing machine Check actual developing temperature and time Check the operating pressure of water cycling; water sprinkler must shoot at right angles; the pressure of brush is symmetrical, etc. Check plate brand and production date Contact plate supplier
3	image cannot be completely sent , scanning platform resets, prompting buffer empty	Data falls behind; data format is damaged; While computer is operating, other processes are called in, such as data transmission. Computer infected with virus	Do not do anything irrelative to the job Clean virus
4	Dark line and dark point appears locally on image	Scratch on the back of plate Dust on the position corresponding to drum	Check the scratch on the back of the plate used, to determine whether it is original or generated during transportation, find out the appropriate position and clear blur; find out the appropriate position on drum and clear blur;
5	Thinner and regular white line found on makeup; White line appears on the solid part of image or dark line appears at blank part	Laser cannot effectively control; corresponding laser drive plate or connection has problem.	Set 0 circuit and 8 circuit as 50 through LaserAdjust program; send focus chart for test; first to make sure which laser circuit has not been controlled; check the connection of the laser product of appropriate circuit, solve the poor contract; if the connection has no problem, replace laser drive plate.

6	Spaced white line appears in a section of image occasions sly	Poor contact of master control board	Replace master control board
7	White line is occasionally found in image	Incorrect configuration of the negative pressure of laser drive (Note: For thermosensitive type)	Reconfigure negative pressure
8	Loss of 3% screen dot	Laser power is on the high side; The developing temperature and time of plate developing machine change.	Make sure the rational exposure power Check the temperature and time of plate developing machine; It should be noted that, whether the replenishing liquid is replenished according to provisions; the rational proportioning of replenishing liquid; it is recommended that the proportioning of replenishing liquid shall be the same as development liquid.
9	Indistinctive white spot but with strip in 98% screen dot	Laser power is on the low side.	Adjust laser power while ensure the developing to be clean
10	tracy or brush mark found on entire makeup	The pressure of rubber rollers of plate developing machine has not been adjusted in place; the pressure of brush roller has not been adjusted in place.	Adjust the pressure of rubber rollers and the pressure of brush roller
11	Light strip or dirt on image	Development is not clean; developing solutions invalid or the conditions for plate developing machine is improperly set.	Increase the temperature of liquid or reduce the speed of plate developing or replace developing liquid appropriately
12	Occasional misalignment of head position in image during plate release	Instable phase locking Coded disc signal interfered Instable movement of servo motor	Check the effective grounding
13	Local messy code occasionally, and sometimes going beyond the range of image-text part during plate release	File damaged Coded disc signal interfered	Check the correctness of display during file preview; Due to the incompatibility between computer master board and memory, the file may be damaged. A virus-free branded computer may be replaced first for test to confirm that the file has not been damaged during production. Check the effective grounding
14	Small white spot or small dark so put on the full plate in image	Plate problem	Replace with the plate of another brand for test
15	Trace on image, not caused by laser scanning	Plate problem Expanded rubber roller of plate developing machine	Since the emulsion of plate is relatively tender, check the trace on makeup caused by friction during input or output; Check the roller system of plate developing machine to see if the makeup is damaged.
16	Black line for publishing, which is divided into irregular black line and	Screw rod and guide rail are lack of oil Deviation of the linearity of scanning platform to drum Change in the movement resistance of screw bar locally	Clean screw bar, front and back guide rail, and add lubricating grease again according to requirements; Check the linearity of drum and scanning platform with dial meter, which should be <0.006mm; if discrepant, parallelism should be adjusted. Refer to Process File.

	the black line at the spacing of 4mm and 5mm.		Check the movement precision with dial meter, which should be <0.004mm; if exceeds the value, the screw bar should be grinded again. Refer to Process File.

6.3 Abnormal Condition of System Working and Way of Handling

Table 6-3-1: Operating Abnormity of System and Handling Method

	Abnormal Condition	Cause Analysis	Handling Method
1	unsmooth plate loading	Inappropriate vacuum absorptive power of plate loading (for D type machine) Inappropriate pressure of plate loading roller wheel (for C type machine) The left and right high/low positions of plate feeder and mainframe are inconsistent; Plate or guide plate with static electricity	Adjust vacuum absorptive power, see Chapter I, Procedures for Integrated Testing Execute LaBoo program, run test program 151 Command, adjust the pressure of two groups of roller wheels to be consistent; during adjustment, the plate at the thickness of 0.15 as reference; feed plate to the plate head front guide, if encounters resistance; no arch in the middle of plate; The feeding guide plate of plate feed should be consistent with the feeding guide rail of main machine in height and centering; when plate is fed to the main machine, the left edge of plate should be more than 3mm from the pointer of roll pull guide; Eliminate static electricity; use alcohol to scrub guide plate; if finds static electricity on plate martial, the static electricity should be eliminated.
2	unsmooth plate unloading	The angle of unloading plate head opened is not enough; The plate base of the thin plate used is too soft;	Adjust opening angle; Contact CRON customer service department
3	Plate withdrawal clipped	Plate has already been deflected during plate loading; plate collides with roll pull guide during plate withdrawal. ForC type machine, the installation of withdrawal guide plate has problem.	Check conveying power and conveying deflection; The guide plate of plate withdrawal must be in parallel with feeding guide plate.
4	Plate tail adjustment failed	Thetail position of drum is inaccurately positioned; The angle is not enough when plate tail is opened and unable to effectively disengage the lock tooth; The left and right tensional strengths of plate tail are damaged; The swing-arm drag spring of plate tail is damaged.	Check No.3 parameter to see if it is accurate; Check the stepping motor, drive, and sensor for plate tail on/off operation to see if they are in normal operating condition; adjust No.5 parameter; Replace the left and right tensional strengths of plate tail Replace swing-arm drag spring of plate tail
5	Plate tail gradient exceeding standard	Irregular plate; Improper setting of No.0 parameter	Check the angle square of plate and verify that the plate meets standard; within 200mm in the middle part, the allowable error is ±4digits, approximately ±0.4mm; Recheck No.0 parameter;

6	Discrepancy between length of plate and template	Actual length of plate is non-standardized; Improper setting of No.8 parameter	Check the actual length of plate; the allowable error is ±10digit, approximately ±1mm; Reset No.8 parameter;
7	Reporting "No Plate on Drum" or "Plate on Drum", please execute command to	Improper adjustment on non-cassette empty detection probe on drum	Execute 105 Command, to reset "cassette empty detection probe";
8	abnormal drum speed during exposure process	Computer virus attacks the program; Drum belt is loosened or drum belt is severely attritional; Instable quality of power;	Kill virus; Adjust the tightness of belt; Ensure the quality of power supply within 220AC±15%;
9	Temperature of laser box exceeds the operating range (preconditioned by meeting ambient temperature)	Temperate measurement sensor (18B20) damaged; Constant-temperature drive plate may be damaged or thread end is poorly connected;	Verify the operating state of temperature sensor and the interchange with rack temperature sensor, and find out the cause; Measure the 4P plug on constant-temperature drive plate with universal meter; in normal state, the input voltage is 15V; output voltage is approximately 9V; if the voltage keeps higher or lower, the standard should be redefined.
10	Optical locking failed	The light emission is not aligned with the center of the energy detection sensor probe; Lens, solid set, and energy detection sensor surface with dust; Poor contact of connected wire; Laser drive plate has problem Poor coupling between optical fiber and laser; Optical fiber damaged; Laser damaged;	Check alignment; Clean the dust on the surface Check the voltage of laser; Check drive plate; Check optical fiber coupling to see if it leaks light; Check optical fiber of solid set to see if it leaks light; Replace laser; Verify which part is in trouble through interchange method.
11	balance block adjustment failed	Whether plate is in standard specification; Whether Motor, drive and sensor operate normally; Whether sensor is correctly installed; Whether the parameter is correctly positioned; whether the sliding gear is correctly opened; Whether the parts and components of mechanism are reliable;	Verify the plate as standardized, without the need to cut after platemaking; Verify the motor, drive, and sensor in good operating condition; Verify reset correctness; Drum is accurately positioned and lock tooth can be effectively opened; Verify the reliability of the movement of parts and components;

7. Circuit Diagram and Electric Appliance Layout

Circuit Diagram

Figure 7-1: Schematic Diagram of Main Control Wiring

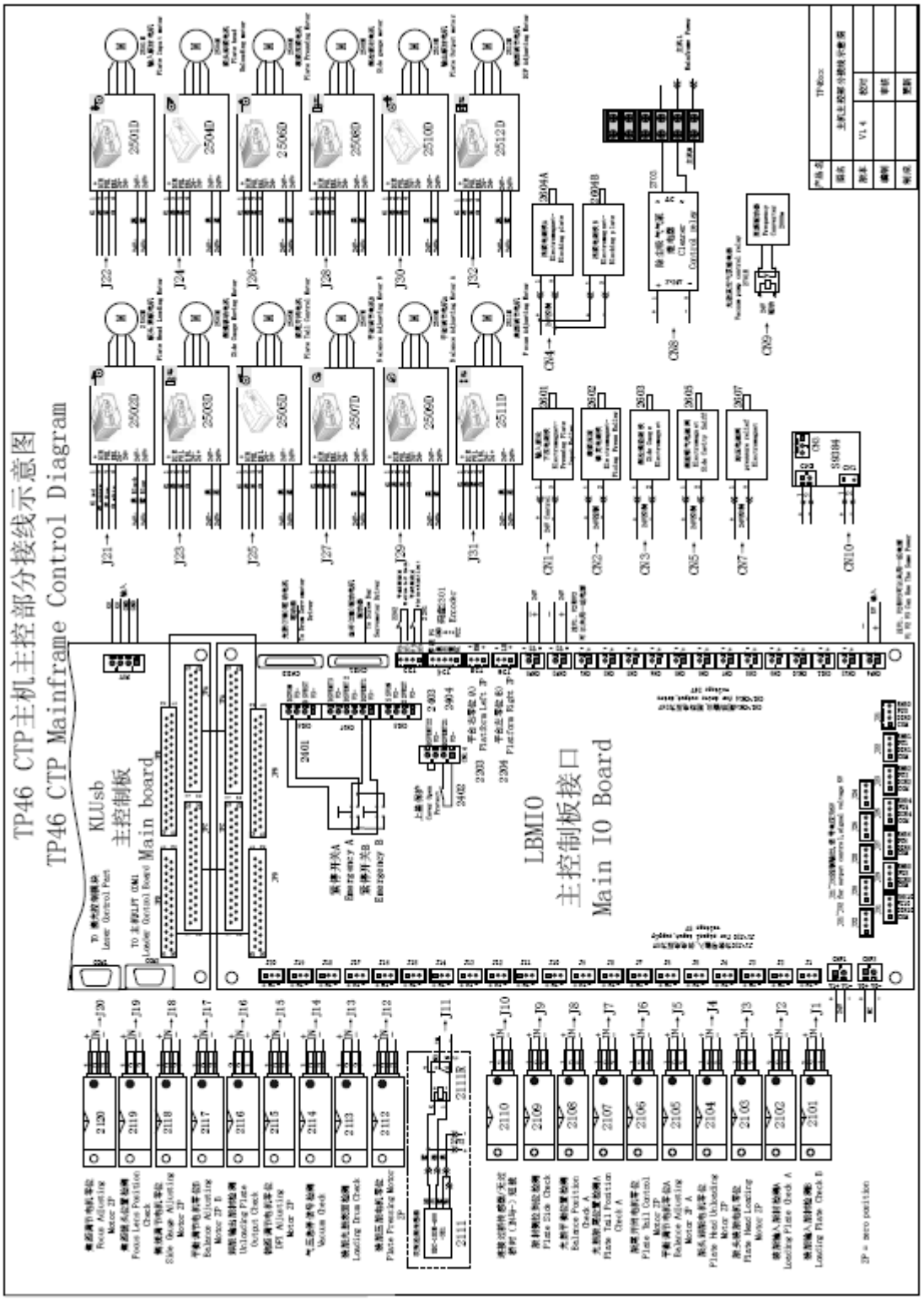


Figure 7-2: Schematic Diagram of CTP Power Supply Part CTP

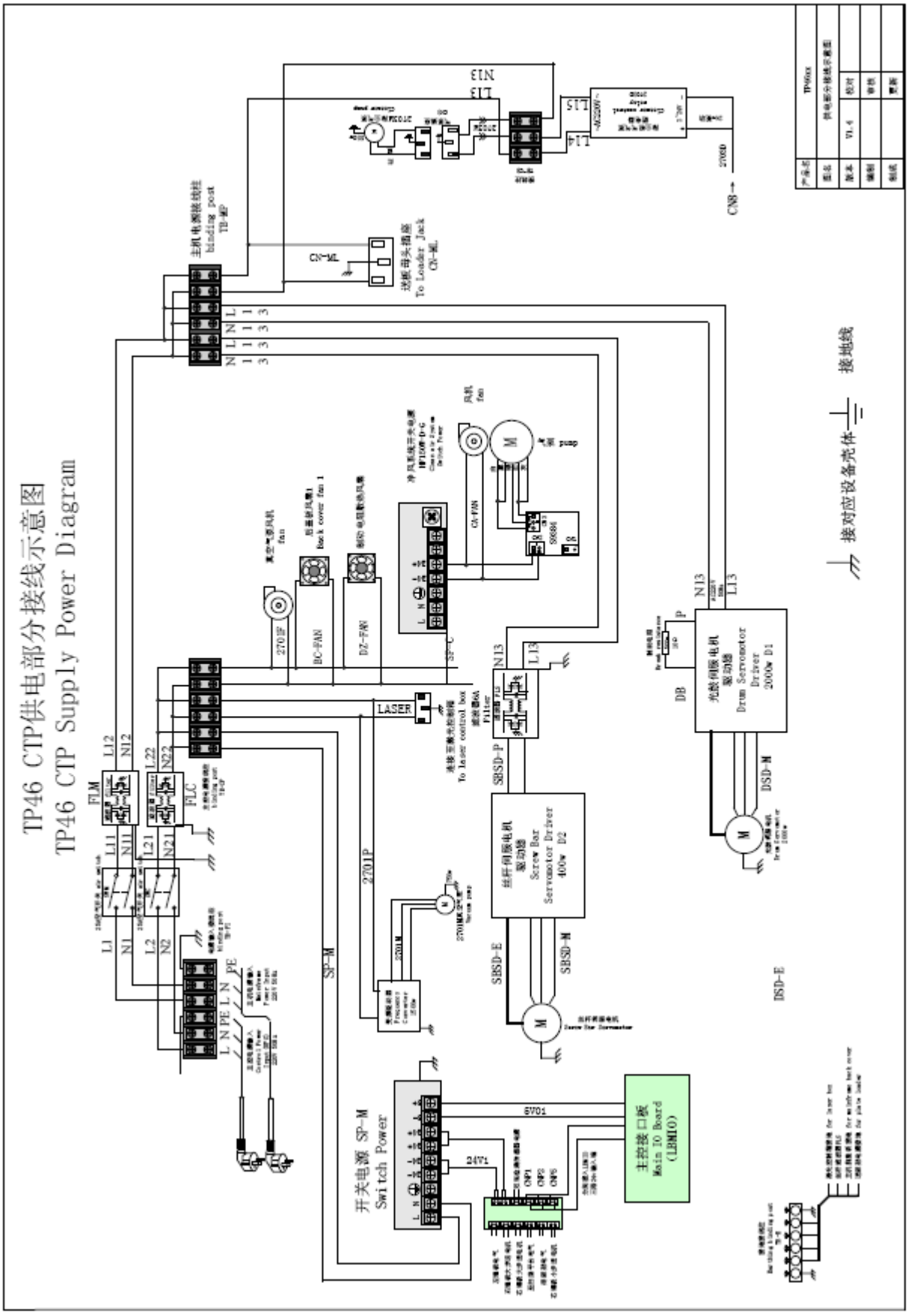


Figure 7-3: Schematic Diagram of Plate Feeder Power Supply and Master Control Part

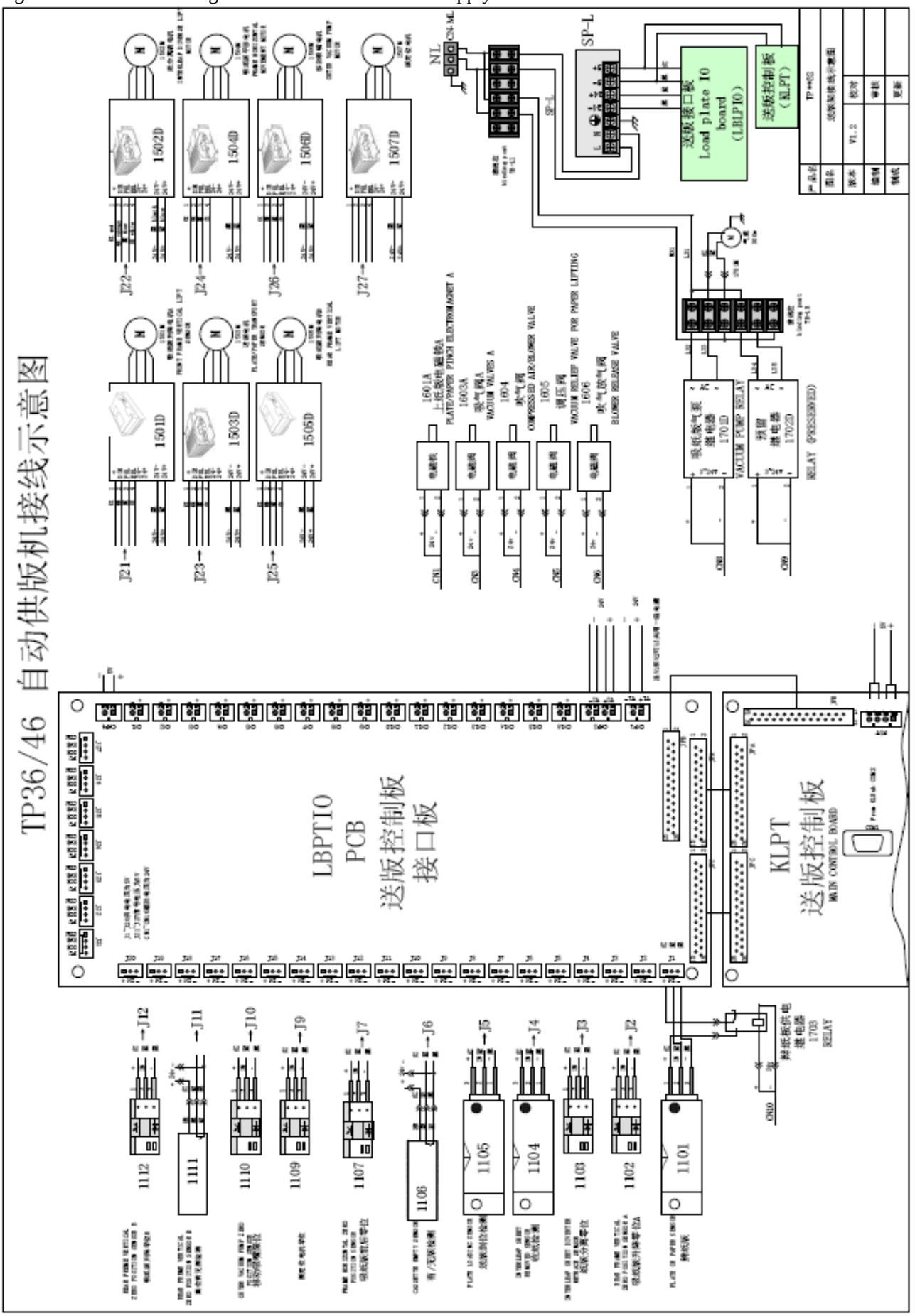


Figure 7-4: Power Supply Wiring Diagram of Heat Sensitive TP64-path Laser Box

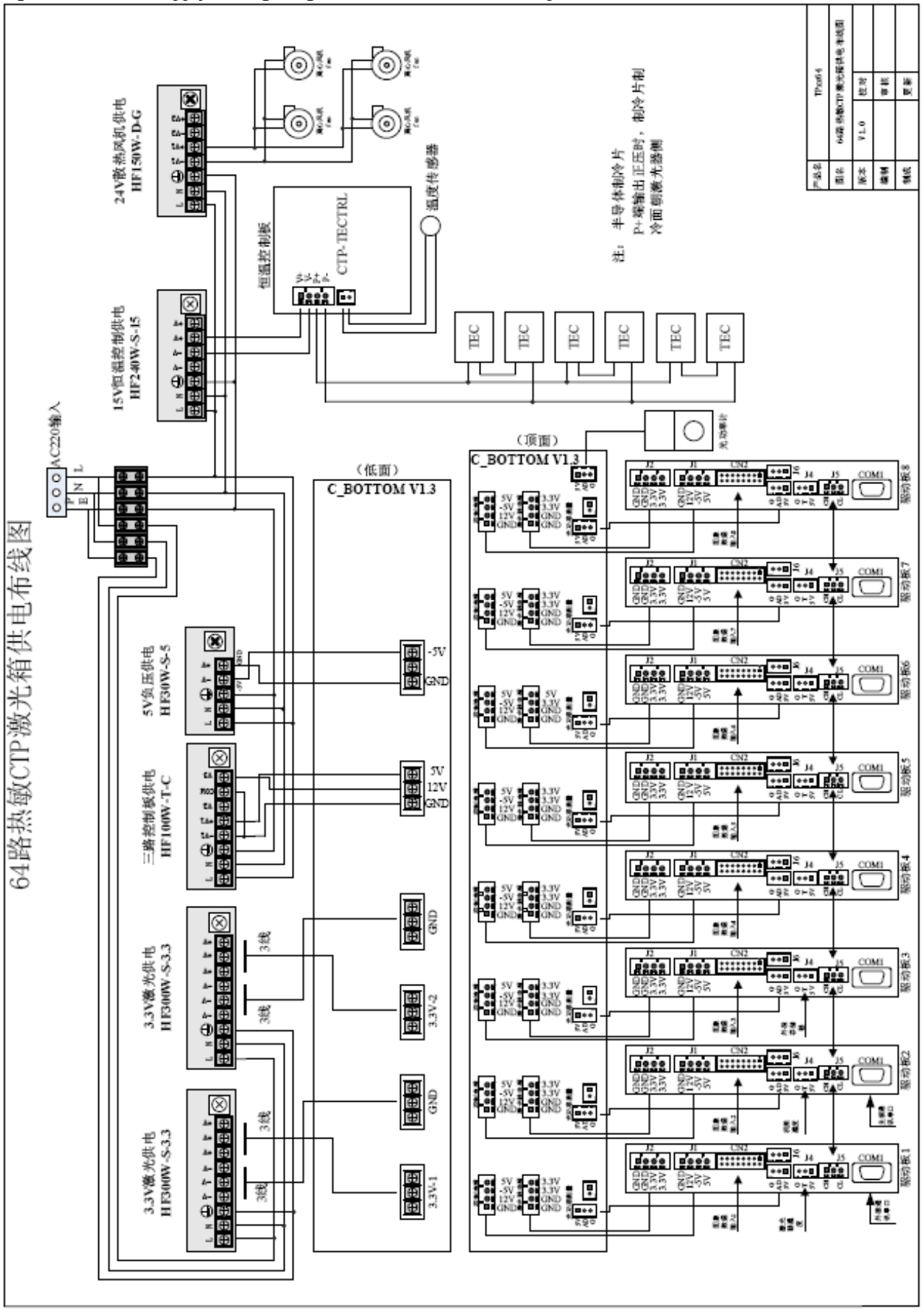


Figure 7-5: Power Supply Wiring Diagram of Heat Sensitive 48-path Laser Box

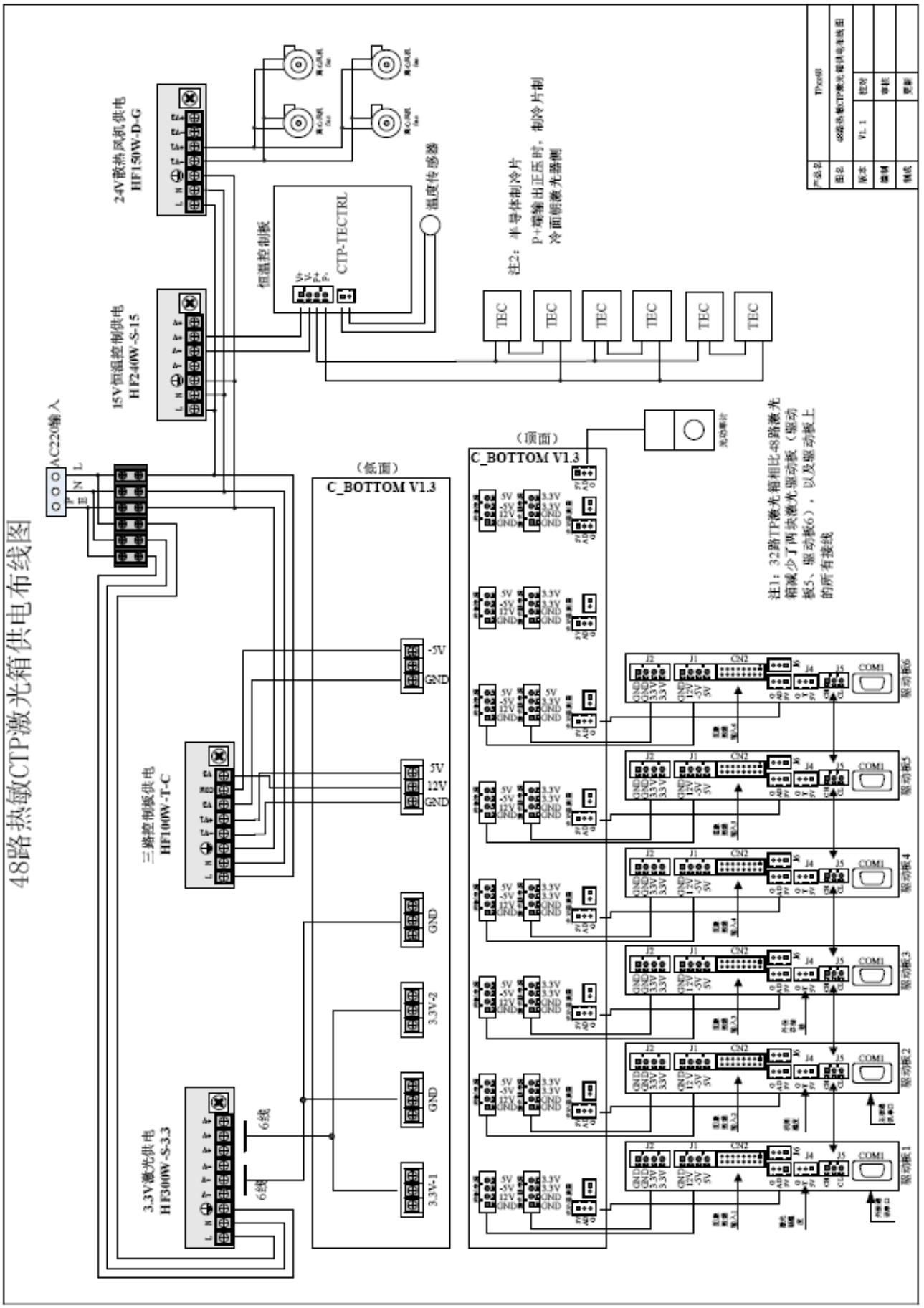


Figure 7-6: Power Supply Wiring Diagram of UVP64 Path Laser Box

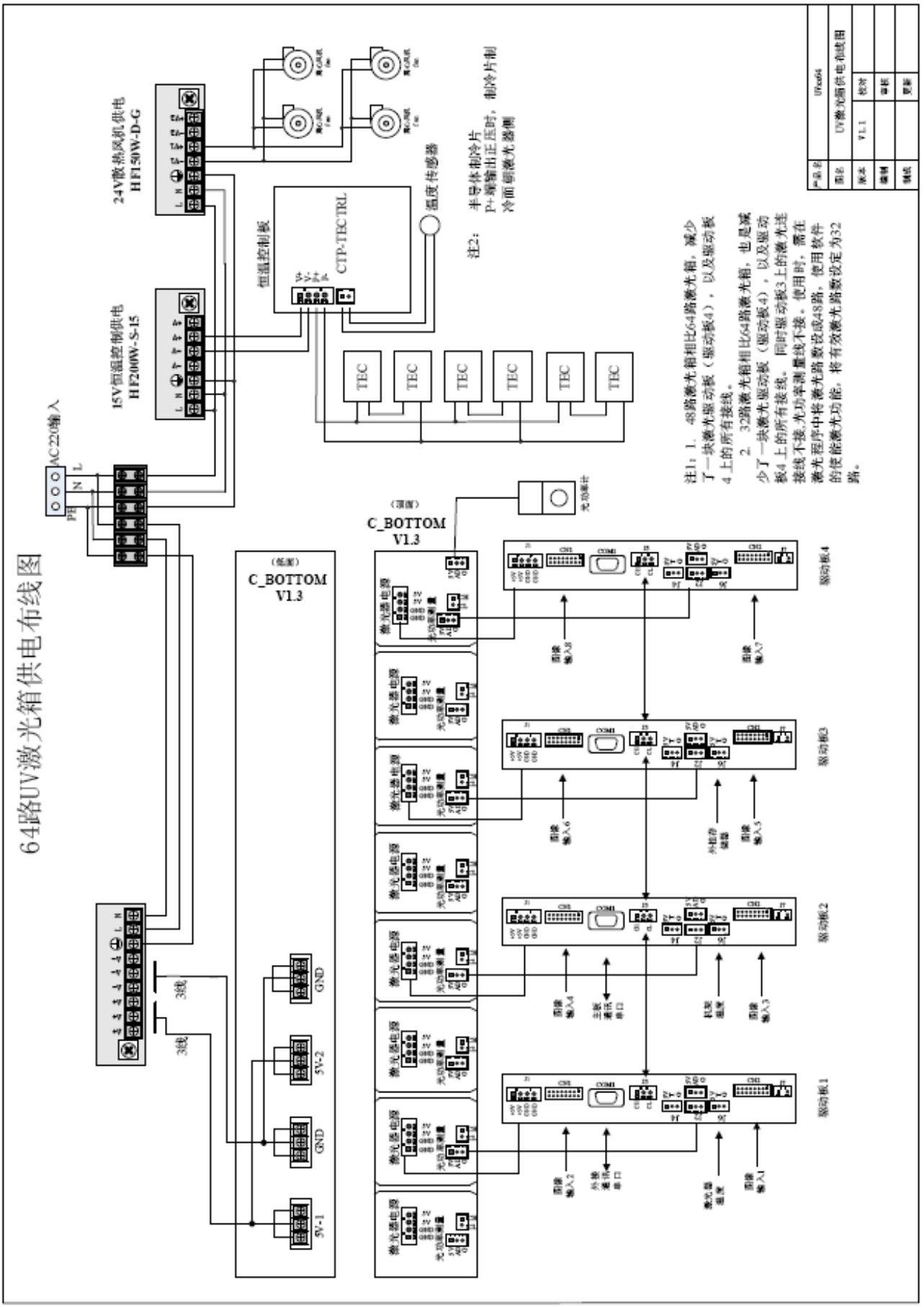


Table 7-1: Corresponding Table of All Actuator Numbers of Mainframe

CTP Mainframe Actuator Serial Number Corresponding Table

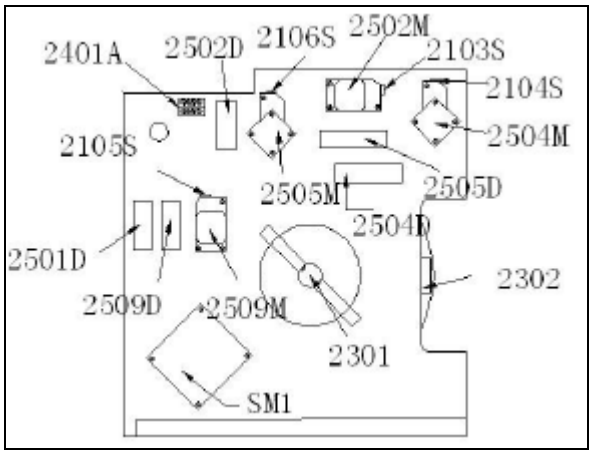
		Stepping Motor				Sensor	
		CTP4	CTP8			CTP4	CTP8
2501	MTB0	Input plate motor	Input plate motor	2101	SNRB0	Loading input plate test B	Loading input plate test B
2502	MTB1	Plate head loading motor	Plate head loading motor	2102	SNRB1	Loading input plate test A	Loading input plate test A
2503	MTB2	Side gauge moving motor	Side gauge moving motor	2103	SNRB2	Plate head loading motor zero position	Plate head loading motor zero position
2504	MTB3	Plate head unloading motor A	Plate head unloading motor	2104	SNRB3	Plate head unloading motor zero position A	Plate head unloading motor zero position A
2505	MTB4	Plate tail control motor	Plate tail control motor	2105	SNRB4	Plate head unloading motor zero position B	Plate head unloading motor zero position B
2506	MTB5	Loading pressure plate motor	Loading pressure plate motor	2106	SNRB5	Plate tail control motor zero position	Plate tail control motor zero position
2507	MTB6	Balance adjustment motor	Balance adjustment motor B	2107	SNRB6	Drum plate tail position test A	Drum plate tail position test A
2508	MTB7	Side pull plate motor	Side pull plate motor	2108	SNRB7	Drum balance position test	Drum balance position test
2509	MTB8	Plate head unloading motor B	Balance adjustment motor A	2109	SNRB8	Plate side pull test	Plate side pull test
2510	MTB9	Output plate motor	Output plate motor	2110	SNRB9	Unloading output platform test	Unloading output platform test
2511	MTB10	Focusing motor	Focusing motor	2111	SNRB10	Drum tail position test B	Drum tail position test B
2512	MTB11	DPI regulating motor	DPI regulating motor	2112	SNRB11	Loading pressure plate motor zero position	Loading pressure plate motor zero position
		Actuator Component		2113	SNRB12	Loading drum surface test	Loading drum surface test
2601	EIB0	Input plate wheel pressing-down electromagnet	Input plate wheel pressing-down electromagnet	2114	SNRB13	Pneumatic emergency stop signal test	Pneumatic emergency stop signal test
2602	EIB1	Loading pressing rolling and locking electromagnet	Loading pressing rolling and locking electromagnet	2115	SNRB14	DPI adjustment motor zero position	DPI adjustment motor zero position
2603	EIB2	Roll pull guide electromagnet	Roll pull guide electromagnet	2116	SNRB15	Unloading transfer-out plate test	Unloading transfer-out plate test
2604A	EIB3	Blocking plate electromagnet A	Blocking plate electromagnet A	2117	SNRB16	Balance adjustment motor zero position	Balance adjustment motor zero position B
2604B	EIB3	Blocking plate electromagnet	Blocking plate electromagnet B	2118	SNRB17	Side gauge adjustment	Side gauge adjustment

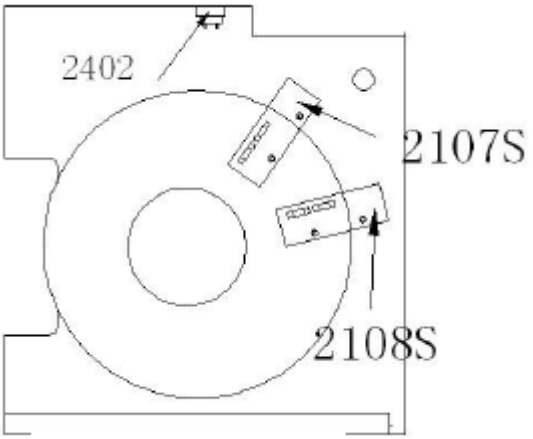
		B				motor zero position	motor zero position
2701	EIB8	Drum vacuum air pump relay	Drum vacuum air pump relay	2119	SNRB18	Focus lens position test	Focus lens position test
2703	EIB7	Dust removal air pump relay	Dust removal air pump relay	2120	SNRB19	Focus adjustment motor zero position	Focus adjustment motor zero position

The difference between CTP4 and CTP8 in wiring shall be expressed with shadow in the table:
CTP4 plate head unloading motor ×2 balance adjustment motor ×1
CTP4 plate head unloading motor ×1 balance adjustment motor ×2
CTP4 unloading plate head on/off zero position sensor on the left moved to dynamic balance adjustment motor zero position sensor A on the right side

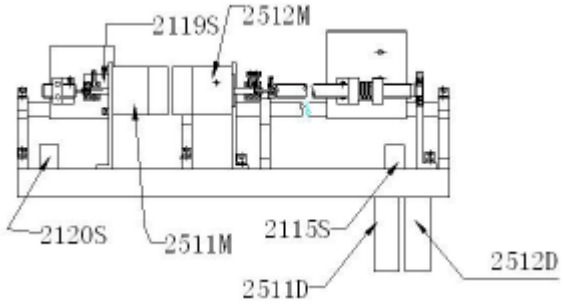
TP-46 Electric Appliance Wiring Diagram

Electric process regulation card	Name of Process	Electric Layout Process	Document No.	CTP8-GY-BJ-01	
Name of Product	TP46 CTP	Version No.	A/0	Totally 5 pages	Page 1





Electric Layout of Right Wallboard
Electric Layout of Inside of Right Wallboard



Electric Layout of Scanning Platform

2501D	input plate drive	2103S	plate head loading motor zero position sensor
2502D	plate head loading motor driver	2104S	plate head control motor zero position sensor
2504D	plate head control motor driver	2105S	balance adjustment motor B zero position
2505D	tail control motor driver	2106S	tail control motor zero position sensor
2509D	balance adjustment motor B drive	2107S	plate tail testing sensor
2511D	focus adjustment motor driver	2108S	balance position testing B sensor
2512D	DPI adjustment motor driver	2115S	zero position of DPI motor sensor
2502M	plate head loading motor	2119S	focus testing sensor
2504M	plate head control motor	2120S	zero position of DPI motor sensor
2505M	tail control motor	2301	drum encoder
2509M	balance adjustment motor B	2302	optical power test (photocell)
SM1	drum motor	2401A	emergency stop switch A
		2402	uncovering protection switch

Electric process regulation card	Name of Process	Electric Layout Process	Document No.	CTP8-GY-BJ-01	
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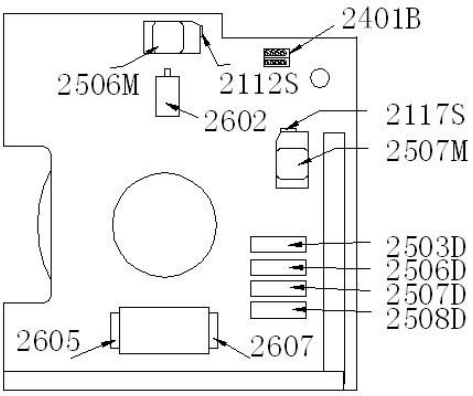
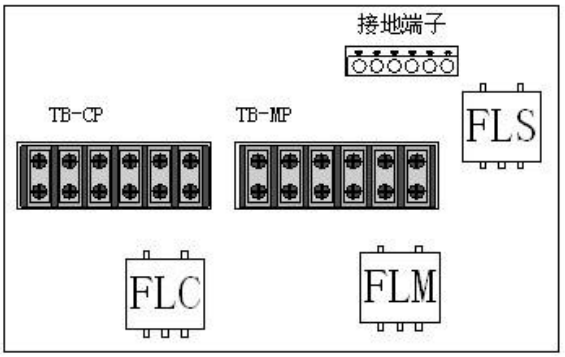
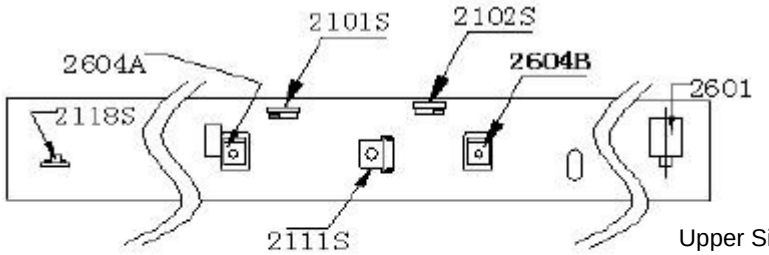


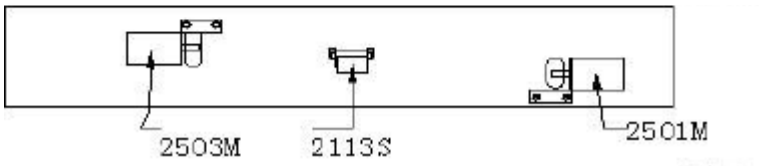
Electric Layout of Left Wallboard



Electric Layout of Electric Installation Board



Upper Side



Lower Side

Electric Layout of Wallboard Supporting Plate

2503D	side gauge movement motor driver	2101S	input plate detection sensor
2506D	loading pressing roller motor driver	2102S	input plate detection sensor
2507D	balance adjustment motor A driver	2111S	double-sheet detection sensor
2508D	roll pull guide motor driver	2112S	loading pressing roller motor zero position
2501M	input plate motor	2113S	plate or paper sensor
2503M	side gauge movement motor	2117S	balance adjustment motor A zero position
2506M	loading pressing roller motor	2118S	motor of roll pull guide zero position sensor
2507M	balance adjustment motor A	TB-CP	Terminal of main control power
2601	input plate wheel press-down	TB-MP	Terminal of mainframe power
2602	loading pressing roller fixing	FLC	Filter of main control power input
2604A/B	blocking plate electromagnet	FLM	Filter of mainframe power input
2605	side cavity sniff solenoid valve	FLS	screw bar drive motor filter
2607	air bleeding solenoid valve	2401B	emergency stop switch B

Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
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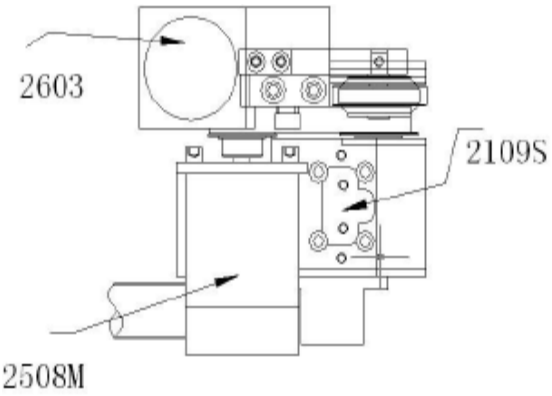
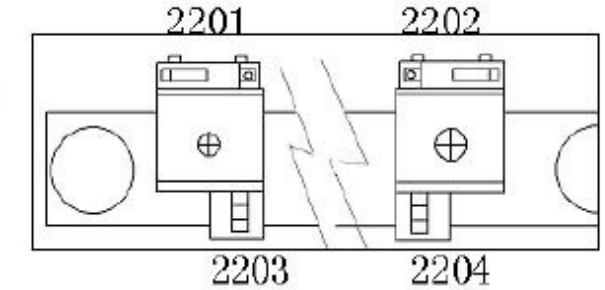
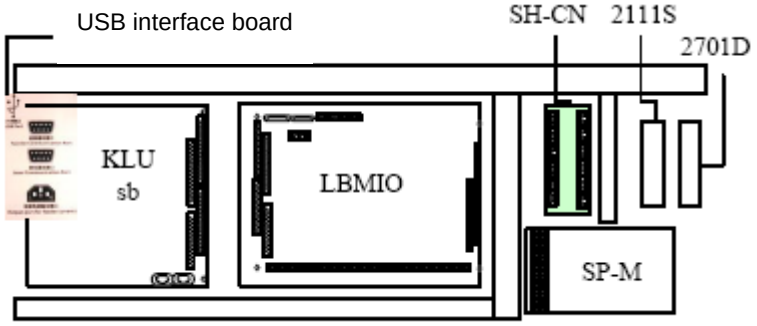


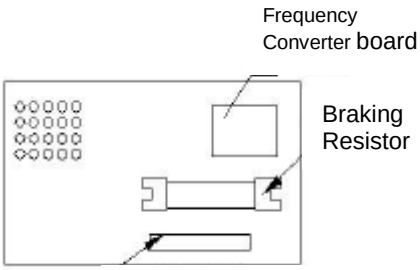
Electric Layout of Left Wallboard



Electric Layout of Electric Installation Board



Electric Layout of Right Side Plate of Rack



Installation Board of Host Power

Right Layout of Rack Bottom Plate

2508M	motor of roll pull guide	2201	Right limit of platform
2109S	Side check sensor of roll pull guide	2202	Left limit of platform
2603	electromagnet of roll pull guide	2203	Right zero position of platform
LBMIO	interface board of main control panel	2204	Left zero position of platform
KLUsb	main control panel	frequency converter	VF0-1.5KW
SH-CN	power splitter plate	braking resistor	500W 10Ω
2111S	double-sheet detection relay		
2701D	vacuum air pump relay		
SP-M	switch power supply (HF300W-D-A)		

USB interface board	USB interface board, communication interface, power supply of plate feeder		

Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
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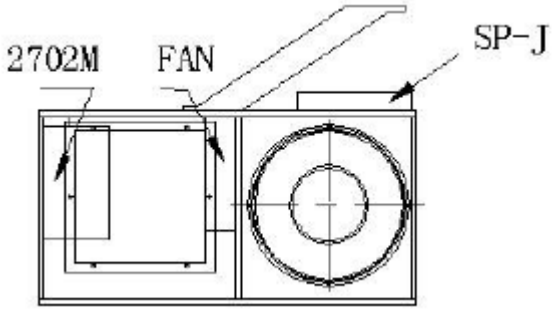
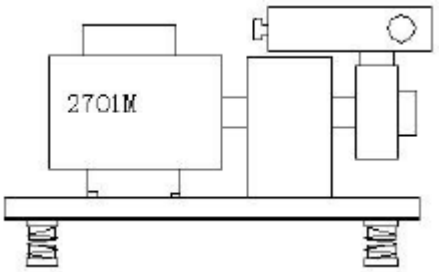
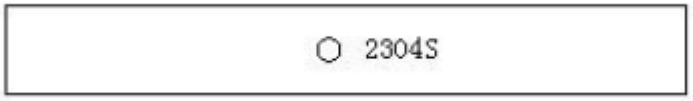


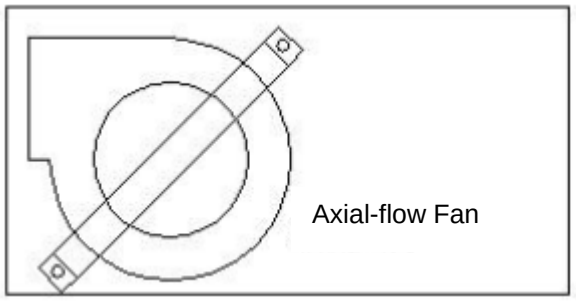
Electric layout of the air-cleaning system



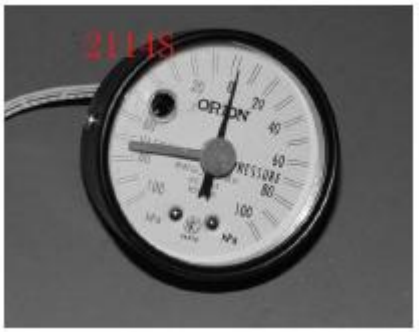
Electric layout of the left bottom plate



Electric layout of the front stay plate



Electric layout of the left stiffened plate



2701M	Motor of vacuum air pump	2304S	rack temperature sensor
2702M	Air pump of air-cleaning system	2114S	pressure emergency stop signal sensor
FAN	Fan of air-cleaning system (BFB1224HH)	axial-flow fan	fan of vacuum air pump(130FLJ-0)
SP-J	Switch power supply of air-cleaning system (150W(24V 6A 5V2A)		

Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
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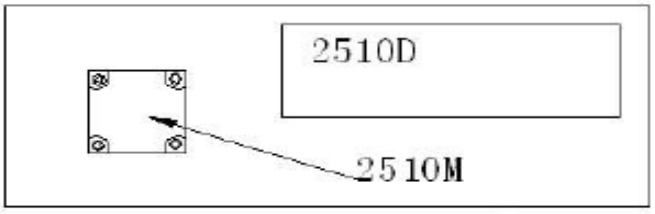
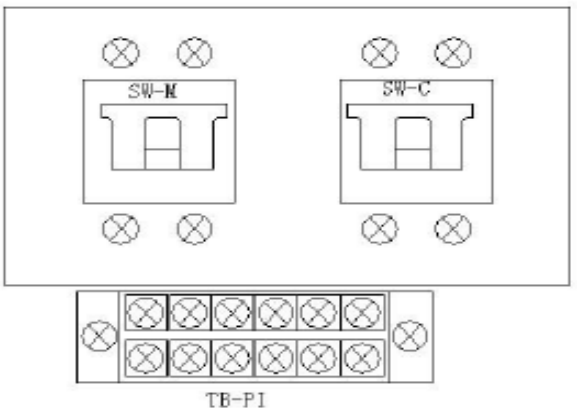
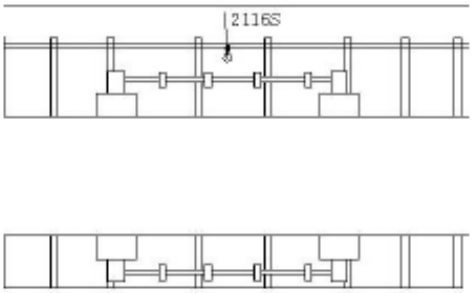


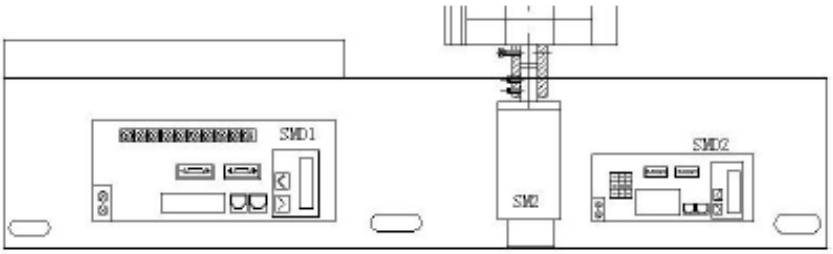
Electric Installation of Typesetting Supporting Plate



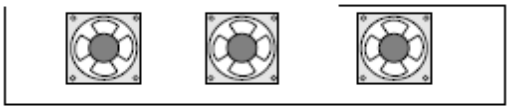
Electric Installation of Air Switch Wiring Board



Electric Layout above Rack on the Right Side



Electric Layout of Typesetting Part

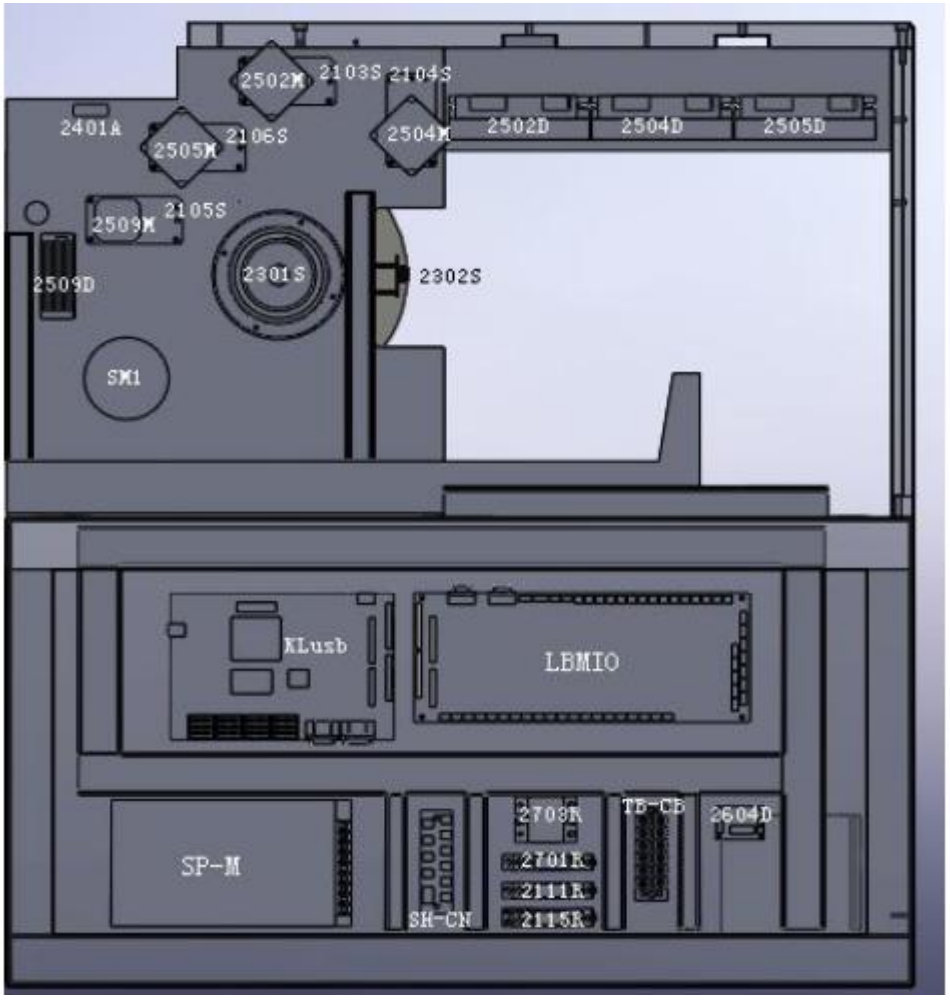


Fan of back cover plate

2510D	Driver of output plate motor	SW-M	Air switch of mainframe power
2510M	Output plate motor	SW-C	Air switch of main control power
2116S	Plate output detection sensor	TB-PI	Binding post of power input
SMD1	Drum servo driver	Fan of back	SJ1238HA2
SM2	Screw bar servo motor		
SMD2	Screw bar servo driver		

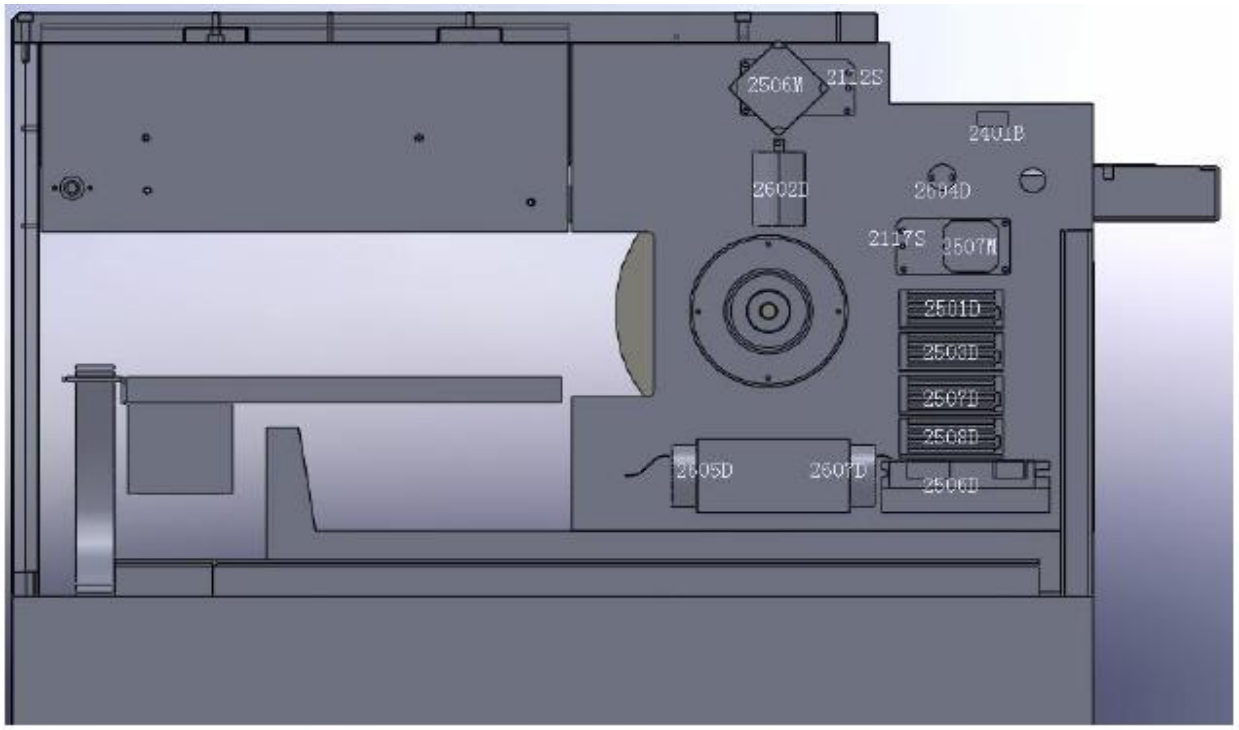
TP-36 Electric Wiring Diagram

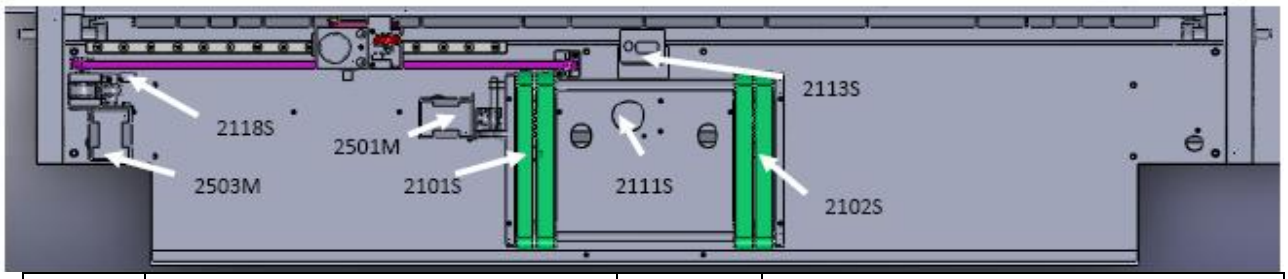
Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
Name of Product	TP36 CTP	Version No.	A/0	Totally 6 Pages	Page 1



2502D	plate head loading motor driver	2103S	plate head loading motor zero position sensor
2504D	plate head control motor driver	2104S	plate head control motor zero position sensor
2505D	tail control motor driver	2105S	balance adjustment motor B zero position
2509D	balance adjustment motor B drive	2106S	tail control motor zero position sensor
2502M	plate head loading motor	2301S	drum encoder
2504M	plate head control motor	2302S	optical power test (photocell)
2505M	tail control motor	2401A	emergency stop switch A
2509M	balance adjustment motor B	KLusb	master control board
SM1	drum motor	LBMIO	master control interface board
2703R	dust arrester air pump control relay (for thermosensitive)	SP-M	master control switch power supply
2701R	vacuum air pump control relay	2111R	double-sheet detection control relay
2115R	angle motor control relay	TB-CB	terminal (for thermosensitive)
2604D	DC motor control board		

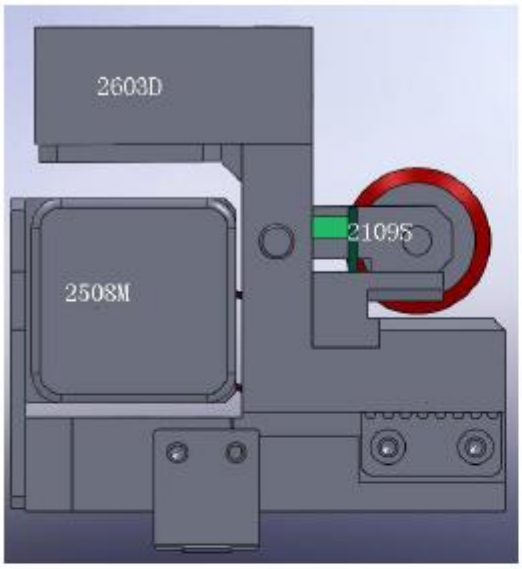
Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
Name of Product	TP36 CTP	Version No.	A/0	Totally 6 Pages	Page 2

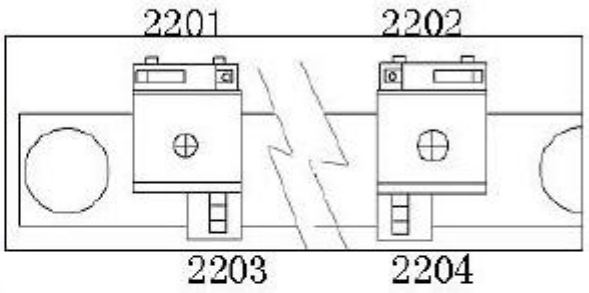


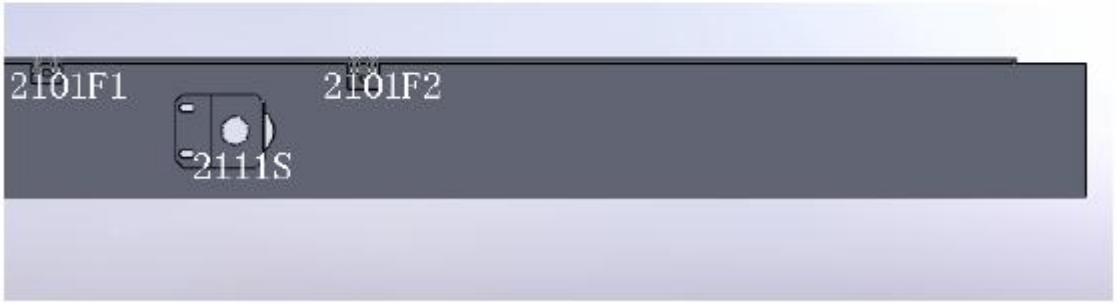


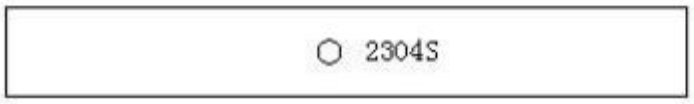
2501D	input plate motor driver	2602D	loading pressing roller fixing electromagnet
2503D	side gauge movement motor driver	2604D	DC blocking plate motor
2506D	loading pressing roller motor driver	2605D	side cavity sniff solenoid valve
2507D	balance adjustment motor A driver	2607D	air bleeding solenoid valve
2508D	roll pull guide motor driver	2101S	plate loading LED sensor receiving tube 1
2501M	input plate motor	2102S	plate loading LED sensor receiving tube 2
2503M	side gauge movement motor	2111S	double-sheet detection sensor transmitter
2506M	loading pressing roller motor	2112S	loading pressing roller motor zero position
2507M	balance adjustment motor A	2113S	plate or paper sensor
2401B	emergency stop switch B	2117S	balance adjustment motor A zero position
		2118S	roll pull guide movement motor zero position

Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
Name of Product	TP36 CTP	Version No.	A/0	Totally 6 Pages	Page 3









Front supporting plate

2508M	motor of roll pull guide	2201	Right limit of platform
2109S	testing sensor of roll pull guide	2202	Left limit of platform
2603D	electromagnet of roll pull guide	2203	Right zero position of platform
2101F1	transmission tube of feeding LED	2204	Left zero position of platform
2101F2	transmission tube of feeding LED	2304S	rack temperature detection sensor
2111S	receiving tube of double-sheet testing sensor		

Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
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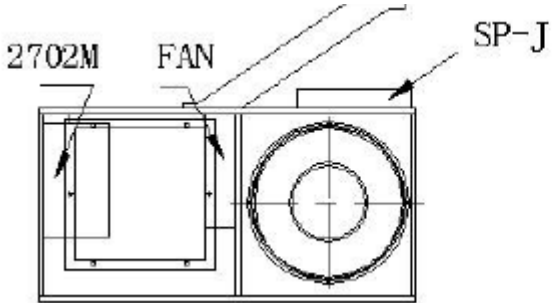
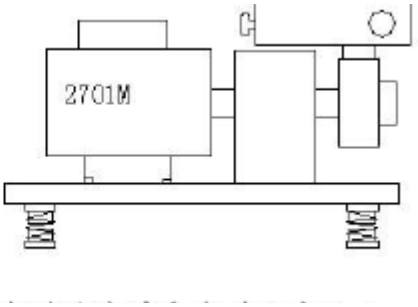
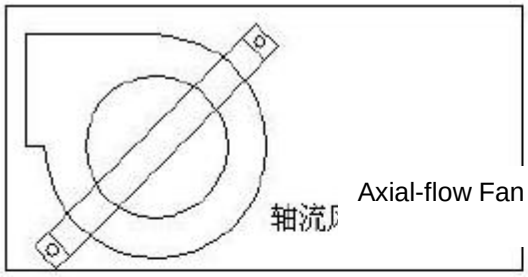


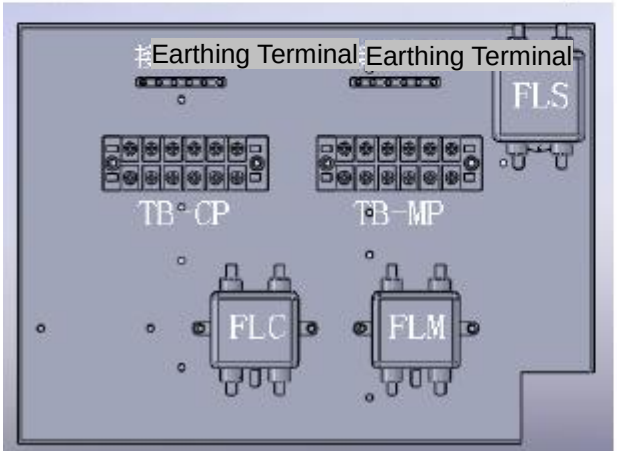


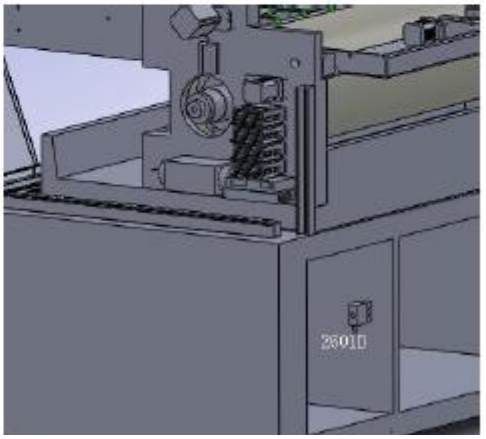
Electric Layout of Clean Air System

Electric Layout of Bottom Plate on the Left



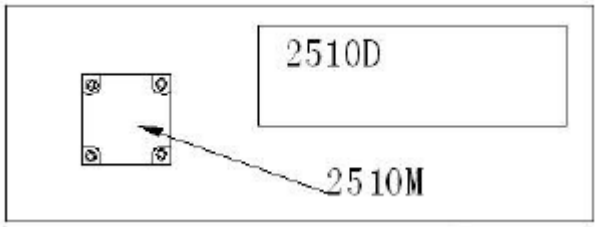
Electric Layout of Gusset on the Left

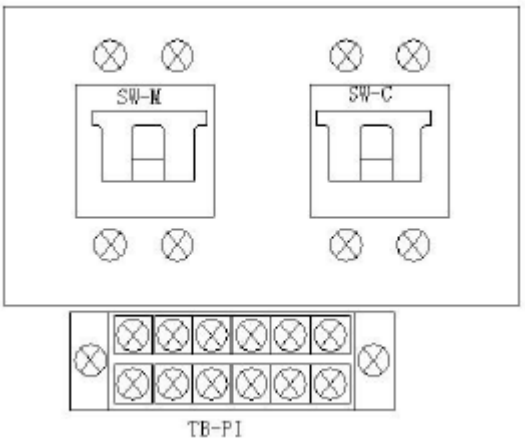




2701M	Motor of vacuum air pump	2304S	rack temperature sensor
2702M	Air pump of clean air system (3BA1002AB22)	2114S	pressure emergency stop signal sensor
FAN	Fan of clean air system (BFB1224HH)	axial-flow fan	Fan of vacuum air pump (130FLJ-0)
SP-J	Switch power supply of clean air system (150W (24V 6A 5V2A)	2601D	air induction solenoid valve of plate loading
FLC	Filter of main control power input	TB-CP	Terminal of main control power
FLM	Filter of mainframe power input	TB-MP	Terminal of mainframe power
FLS	Filter of screw bar drive power	earth terminal	

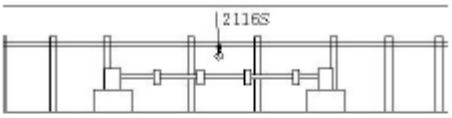
Electric process regulation card	Name of Process	Electric Layout Process	Document No.		CTP8-GY-BJ-01
Name of Product	TP36 CTP	Version No.	A/0	Totally 6 Pages	Page 5

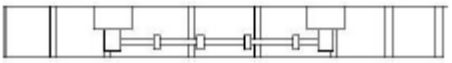




Electric Installation of Typesetting Supporting Plate

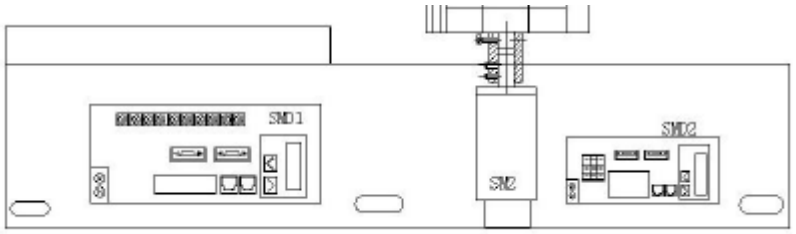
Electric Installation of Air Switch Wiring Board





Electric Layout of Typesetting Part

Electric Layout above Rack on the Right Side



Fan of back cover plate

2510D	Driver of output plate motor	SW-M	Air switch of mainframe power
2510M	Output plate motor	SW-C	Air switch of main control power
2116S	Plate output detection sensor	TB-PI	Binding post of power input
SMD1	Drum servo driver	Fan of back cover plate	SJ1238HA2
SM2	Screw bar servo motor		

SMD2	Screw bar servo driver		

Electric process regulation card	Name of Process	Electric Layout Process	Document No.	CTP8-GY-BJ-01	
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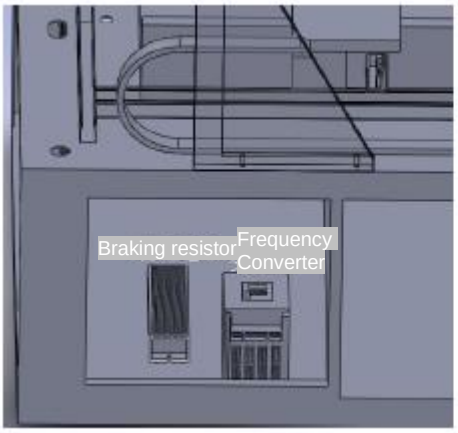
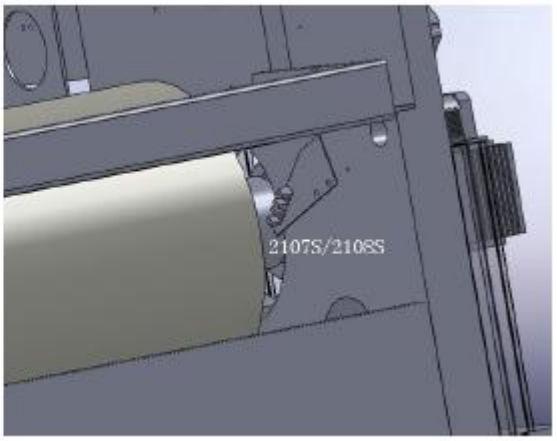
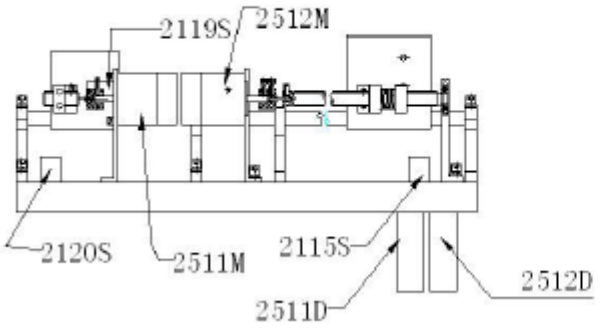
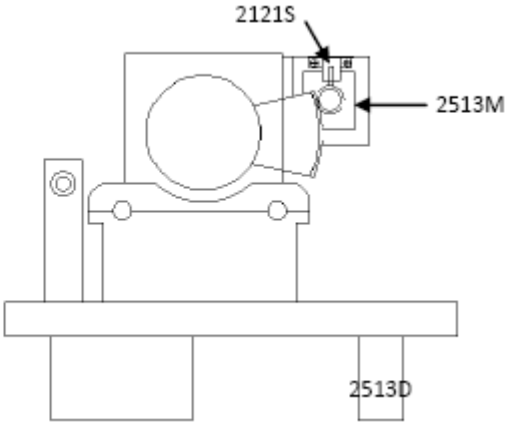






Side View of Scanning Platform



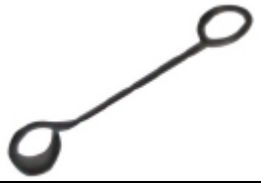
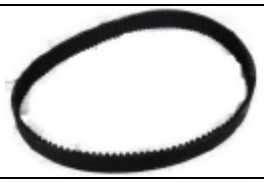
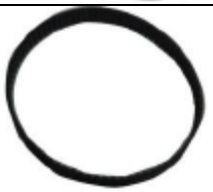
Front View of Scanning Platform

braking resistor	500W 10Ω	2511M	focus motor
frequency	PanasonicVF0-1.5KW	2512M	DPI motor
2107S/2108S	DRUMZERO-LEFT	2513M	angle adjusting motor
2511D	driver of focus motor	2115S	zero position of DPI motor
2512D	driver of DPI motor	2119S	lens position detection
2513D	driver of angle adjusting motor	2120S	zero position of focus motor
		2121S	zero position of angle adjusting motor

Appendix 1 List of Wearing Spare Parts

1. List of Wearing Mechanical Spare Parts

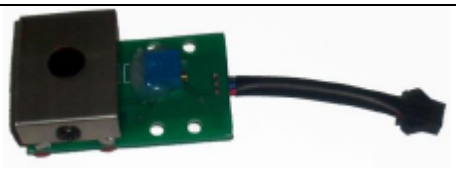
No.	Description on Fittings		Reference Picture
1	name	plate tail gear left tensional spring	
	code	028001903	
	model	CTP4-1256B	
2	name	plate tail gear right tensional spring	
	code	028001904	
	model	CTP4-1257B	
3	name	solid set holder backlash spring	
	code	027209100	
	model	02LD-90-10	
4	name	070422 reverse spring (balance unlock, loading roller)	
	code	028002940	
	model	CTP4-1445	
5	name	070428reverse spring (2008 loading roller)	
	code	028002941	
	model	CTP4-1439	
6	name	050430 reverse spring	
	code	028002957	
	model	CTP4-1670	
7		plate head drag spring component	
		028001910	
		TP33-1270-H	
8		plate tail drag spring component	
		028001911	
		TP33-1270-T	

9	name	stop electromagnet draw hook	
	code	028001418	
	model	CTP8-1427.01A	
10	name	balance block right tensional spring	
	code	028001905	
	model	CTP4-1285#1B	
11	name	balance block left tensional spring	
	code	028001906	
	model	CTP4-1285#2B	
12	name	barrel holder drag spring	
	code	027209310	
	model	02LD-09-31	
13	name	union steel wire	
	code	027209450	
	model	02LD-09-45	
14	name	synchronous belt	
	code	022042347	
	model	HTD-156-3M-10	
15	name	roll pull guide synchronous belt	
	code	022042040	
	model	synchronous belt B75MXL	
16	name	rubber roller 3	
	code	028002969	
	model	CTP4-1192	
17	name	synchronous belt	
	code	022042350	
	model	620-5M-30	
18	name	synchronous belt	
	code	022042341	
	model	66MXL	

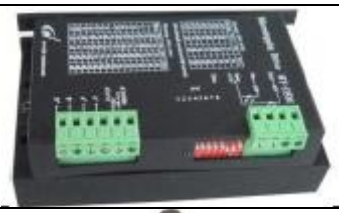
19	name	working nut (1/3)	
	code	028315282	
	model	TP36-1528	
20	name	working nut (1/3)	
	code	028815280	
	model	TP46-1528	
21	name	suction nozzle 1 kit	
	code	028003032/028002619	
	model	CTP4-1711#1/CTP4-1422	
22	name	suction nozzle 2 kits	
	code	028003033/028002619	
	model	CTP4-1711#2/CTP4-1422	
23	name	Philips filter screen HR4985	
	code	060102873	
	model	HR4985	
24	name	air filter element	
	code	060102182	
	model	Φ157/Φ87/163	
25	name	super clean filter	
	code	022031273	
	model	5 inch PP cotton	

Note: 1. Zp represents initial position;
2. Update date: July 30, 2010;
3. The code number and graphics of all fittings above are for reference only and are subject to change without notice.

2. List of Wearing Electronic Spare Parts

No.	Description on Fittings		Reference Picture
1	name	film planar cable	
	code	022031130	
	model	1.25FFC 26 core	
2	name	optical power sensor	
	code	022028320	
	model	LDPWM-UV-A	
3	name	master control board	
	code	022028311	
	model	KLUsb	
4	name	drum servo motor	
	code	022020230	
	model	GYG202CC2-T2G 2.0 KW	
5	name	brake resistor	
	code	022020251	
	model	brake resistor 500W 10Ω (aluminum case)	
6	name	side gauge motion motor	
	code	022033302	
	model	FL42STH47-05A2	
7	name	plate head unloading motor	
	code	022033303	
	model	57HS09	

8	name	plate tail on/off motor	
	code	022033304	
	model	57HS09	
9	name	42 motor driver	
	code	022021040	
	model	ZZ-001-C	
10	name	unloading output platform test	
	code	022025040	
	model	R50	
11	name	loading and pressing plate motor ZP	
	code	022025060	
	model	GK152-C	
12	name	air pump switch solid-state relay	
	code	022030039	
	model	2RSSR-DA (380V 25A)	
13	name	platform right ZP sensor (A)	
	code	022025061	
	model	GK152-CO	
14	name	platform left ZP sensor (B)	
	code	022025061	
	model	GK152-CO	
15	name	main control board - mainframe external USB cable	
	code	028001132	
	model	BM-AF 300mm	
16	name	mainframe external USB - Computer USB cable	
	code	028001142	
	model	AM-AM 2M	

17	name	UV laser drive plate ((Type X/Type I/Type II))	
	code	022028335/8332/8334	
	model	C405LDDR-130mA/250mA/450mA	
18	name	switch power supply 300w	
	code	022031014	
	model	HF300W-S-3.3	
19	name	touch sensor	
	code	022025080	
	model	CM12-3004NA	
20	name	Φ 8 tee	
	code	028001132	
	model	SPE-8	
21	name	color sensor	
	code	022028299	
	model	TCS-W-B	
22	name	roll pull guide sensor	
	code	022028367	
	model	DG211V-T	
23	name	57 stepper motor driver	
	code	022021011	
	model	DS335	
24	name	inching switch	
	code	022033600	
	model	RV-165-1C25	
25	name	UVCTP laser interface board	
	code	022028296	
	model	LBMIO V1.4	

26	name	UV lamp X/I/II	
	code	022032034/2019/2024	
	model	K41S03C/201E/203E	
27	name	laser kit (single laser pipe)	
	code	022032027	
	model	K83S02F	
28	name	laser drive plate	
	code	022028308	
	model	CTP-LDDR V1.3	

Note: 1. Zp represents initial position;
2. Update date: July 30, 2010;
3. The code number and graphics of all fittings above are for reference only and are subject to change without notice.